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ABSTRACT

Recommendations and suggestions, as well as statutory provisions and state board regulations, are presented regarding school building construction in Idaho. The material is organized into the following sections--(1) school building planning, (2) the school site, (3) construction planning and requirements, (4) secondary school planning, (5) elementary school planning, (6) electrical installations, (7) heating, ventilating and air conditioning, and (8) sanitary facilities, water supply and sewage disposal. The appendices contain--(1) instructions for bond elections, (2) school laws applicable to school building construction, (3) recommended headings for specifications, and (4) a check sheet for preliminary plans and specifications. (FS)

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State of Idaho

DEPARTMENT OF EDUCATION

MANUAL OF REGULATIONS AND RECOMMENDATIONS FOR SCHOOL BUILDING PLANNING AND CONSTRUCTION

Revised June, 1964

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EF 001 234

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INTRODUCTION

This revision of Idaho's Manual of Regulations and Recommendations for School Building Planning and Construction has as its purpose the necessary changes brought about by new building methods, changes in concepts of heating and lighting, newer methods of instruction, and general modernization of all phases of education.

A concentrated effort has been made to make the revision useful to all those involved in the construction of school buildings from those who do the original planning to those who complete the final details of construction.

The revision should be used as a guide and although there are minimum standards to be met, these minimums should not become maximums.

School building costs in Idaho have continued to be considerably lower than the national average for several reasons. Chief among these reasons has been the excellent planning by the architects, engineers, school administrators and boards of trustees to get the greatest possible value from each dollar spent for school buildings. Of course, another large contributing factor is the difficulty of passing bond elections with the required two-thirds majority of real property taxpayers. This usually causes an emergency to exist before school buildings can be constructed and every available space must be put to immediate use. Some of the finer refinements of buildings have had to be over-looked in the attempt to simply supply rooms for students. As an example, some states have made exhaustive studies on the effects of different colors of paint while we in Idaho have been chiefly concerned with attempting to provide walls for future painting.

While Public Education is a responsibility of the State under Idaho's Constitution, great responsibilities have been delegated to the local districts. These delegated responsibilities are quite broad and local control is promoted as far as possible with minimum requirements to be met. It is sincerely hoped that local districts go beyond these minimum requirements in school buildings as well as in other parts of the entire educational program.

The State Board of Education through its agency, the State Department of Education, in considering school housing has as its primary concern the continued provision of safe, economical, efficient buildings for the best educational program possible.

The following material offers recommendations and suggestions as well as statutory provisions and State Board regulations regarding school building construction. Mandatory regulations are designated by the word "shall" and are underlined. Each paragraph has been numbered for reference purposes and for easy identification.

SCHOOL BUILDING PLANNING

1-1.0 Educational Philosophy

This is the first requirement of any planning for school buildings. It is also the most often overlooked and perhaps the most difficult duty of local boards of trustees and superintendents. The establishment or determination of purposes or goals of a school district is essential before a school building program can be truly successful.

1-2.0 Educational Program

Following the discovery and adoption of said educational philosophy the methods of meeting the goals expressed therein must be accepted. A complete educational program for the entire district must be developed. Educational specifications for each school building to fit into the overall program should be available to the architect before he starts his preliminary drawings, otherwise, the building will determine the type of education throughout its lifetime.

1-3.0 Building Survey

1-3.1 The school plant survey is a study designed to develop a master plan of future construction for an entire school district rather than a detailed plan of an individual building within the total program.

1-3.2 The first step is the determination of the total school plant needs of a school district based upon estimates of future enrollments as well as the total school program as it is at present.

1-3.3 The second step is the determination of how well present facilities are meeting the total need. From this a determination of necessary new facilities can be made.

1-3.4 The third step is the finding of suitable locations for school buildings. Naturally, it is not always possible to purchase the most ideal site, but consideration should be given to finding the most desirable which can be purchased without exorbitant expense.

1-3.5 The fourth step is a survey of financial resources after determination of the needs. It follows naturally that the money available to meet those needs must be determined. Methods of obtaining necessary funds would be included in this step .

1-4.0 Financing

1-4.1 Bonding: The most common method of obtaining funds for buildings is by passing an election to bond the district. The required approval by a two-thirds majority of real property taxpayers voting at an election gives real protection to property owners. Since most bonds are issued for a period of twenty years, the total amount paid for interest becomes large enough to warrant careful consideration.

1-4.2 School Plant Facilities Reserve Fund: Originally this fund was established to build up a balance in order that the full cost of building would not be required at the time of bonding. However, the extreme shortage of funds made it necessary to use this money for regular capital outlay items.

1-4.21 Some districts have used this method of paying for buildings as separate units are built. This necessitates long range planning and firm agreement on what will be included in the total program.

1-4.3 General Fund: Those districts fortunate enough to support their educational program with less than the maximum levy have in some cases used General Fund monies for buildings. However, the legality of such action could be questioned. The establishment of a School Plant Facilities Reserve Fund and subsequent transfer from the General Fund to this fund is possible under 33-901, I.C.

1-5.0 Committees

There is a difference of opinion on the use of committees in school building planning. It is felt by many that everyone in a community should be involved in the planning. Others are certain that only those with special training and experience should be involved. A compromise between these extremes will no doubt be the best solution. It should be well understood that any committee acts in an advisory capacity only and that final decisions are the duty of the local board of trustees.

1-6.0 Local Board of Trustees

The local board of trustees as the governing body of the local school district should have a written policy which depends upon and is in agreement with the Educational Philosophy of the district. Such policy should be supplemented by rules and regulations concerning school building planning and construction. Duties of individuals and groups should be described in these written rules and regulations.

1-7.0 Superintendent of Schools

The superintendent as the employed executive of the school board is charged with the duty of carrying out the adopted policy of the board. He must act as advisor and administrator in all of the processes of school building as in all other educational activities.

1-8.0 Architect

Idaho Code (54-309) requires the employment of a licensed architect for all school buildings. The choice of a competent architect must be made early in school building planning. He must be given a good understanding of the educational program desired and the educational specifications for each individual building.

1-9.0 Preliminary Plans

1-9.1 Preliminary plans must be drawn by the architect and accepted by the local school trustees. Two copies of these preliminary plans shall be submitted to the State Department of Education for approval and/or suggested alteration.

1-9.2 Preliminary plans and outline specifications must be submitted and approved before working drawings are started. The State Department of Education will notify the architect when plans are received. It is well to see that before submitting the preliminary plans all necessary information on all items has been included. (The appendix contains a check list used by the Department of Education.)

1-10.0 Working Drawings

1-10.1 Working drawings and specifications for new buildings, additions, and major alterations shall be submitted for approval to the State Board of Education and the State Board of Health (33-122, I.C.). These should be prepared by the architect and submitted by the Board of Trustees to the State Board of Education. It is recommended that the title headings shown in the appendix be used.

1-10.2 Drawings and specifications shall include two complete sets of general drawings, two complete sets of mechanical drawings, two complete sets of electrical drawings, and all specifications relating thereto.

1-10.3 The working drawings shall be marked approved or disapproved, and the district notified within fourteen (14) days after receipt by the State Department of Education. Should the district not be notified before the fourteen days from the time of receipt have elapsed, the plans and specifications shall be considered to have been approved. Approval must be obtained before advertising for bids.

1-11.0 State Board of Education

1-11.1 The State Board of Education is responsible for the educational program of the State. The State Superintendent of Public Instruction, as an elective officer of the State and as the Executive Secretary of the State Board of Education is charged with the responsibility for carrying out the educational laws of the State and the general policy and directives of the State Board of Education in providing for the general supervision of the public school system of the State.

1-11.2 The State Department of Education consists of a staff of professional and clerical employees who assist the Superintendent of Public Instruction in the discharge of his duties. One of the basic functions of the State Department is service. This applies in the area of school planning as well as in the areas of finance and instruction. The services provided by the State Department of Education in connection with school plant planning are:

1-11.3 To review and approve preliminary and working drawings and specifications for new school buildings and additions or alterations to existing buildings.

1-11.4 To secure approval of other state agencies, when and if they become involved.

1-12.0 Contracts for Building

1-12.1 Advertisement for and acceptance of bids for construction shall follow final approval of working drawings. A list of bidders showing their bids and the successful bidder shall be sent to the State Board of Education after awarding of the contract for construction.

1-12.2 Section 54-1904 a, I.C. also requires that a list of all subcontractors be sent to the State Tax Division within thirty days after contracts are awarded.

THE SCHOOL SITE

2-1.0 Although there are basic criteria which must be considered in school site selection, such as minimum size, adequate utilities, etc., it should be borne in mind that local conditions are variable and, therefore, final determination of school site selection is a responsibility of the local board of trustees. It should be understood that the selection of a school site is a technical problem and involves the cooperative efforts of school officials, the architect, legal and recreational consultants, and in some instances urban planners.

2-1.1 The selection of an architect should be made prior to the selection of a school site and the architect's services should be used in coordinating and evaluating the data necessary for selecting the most suitable location. After a site has been selected, a more thorough survey must be completed and preliminary development information prepared in order that the ultimate cost of the school construction may be estimated with accuracy sufficient to determine the amount of any necessary bond issue. An architect shall be employed prior to, and his services used, in the preparation of this site development information.

2-1.2 The environment of every school should provide to the greatest possible degree:

(1) Safe and healthful conditions for the pupils and teachers while on the school grounds, in the building, and in the immediate neighborhood of the school;

(2) Freedom from disturbing noises such as those resulting from heavy truck, automobile, railway, and airplane traffic and from fire sirens and factory whistles;

(3) Freedom from obnoxious odors;

(4) Surroundings that will tend to create a feeling of pride and happiness.

2-1.3 School sites should be selected well in advance of actual needs, otherwise the school system may be forced to accept unsuitable parcels of land at inflated prices, resulting in increased cost to the taxpayer and serious interference with the educational program. In selecting a site the present and probably future needs of the area must be considered. Population increases, industrial locations and commercial developments all play a part in determining future needs. There are a number of procedures and devices that are helpful in securing necessary basic information for long-range planning which leads to the actual selection of the school site. Land-use maps, aerial photographs, soil and topographical maps and population projections are among the many sources of information that may be available to assist in making sound determinations for school site selections. Specific attention should be paid to the distance pupils will have to walk or be transported in order to keep transporation problems to a minimum. Care should be taken to locate schools to minimize traffic hazards.

2-1.4 Careful consideration must be given to the availability of utility services at any school site under consideration. This is particularly true with regard to water, sewage disposal and fire protection. Consideration must also be given to other utilities, such as electrical services and in some cases the availability of gas lines. An adequate and continuous supply of safe drinking water shall be provided in all school sites. Adequate and safe sewage disposal shall be provided in accordance with state statutes and regulations. The State Board of Health should be contacted prior to final site selection to be certain that the proposed site will meet sanitary standards. (The Idaho State Board of Health provides information and assistance in the determination of adequate safe water supply and providing sewage disposal systems which will meet the needs of the proposed plants.)

2-1.5 The size of the site must be given careful consideration. Sites of inadequate size have been one of the primary causes of early school building obsolescense and curtailed school-community programs. Although more site space may not be necessary immediately, experience has indicated that ultimate site requirements should be met with initial site acquisition. The size of any school site should be determined largely by the nature and scope of the contemplated educational program. Actual layouts of the space needed by the various phases of the program should be made. While it is recognized that for many schools much larger areas are preferred, the following shall be considered as minimum mandatory requirements:

2-1.51 For elementary schools, that there be provided a minimum site of five (5) acres plus an additional acre for each 100 pupils, in excess of 100 pupils, of predicted ultimate maximum enrollment. Thus, an elementary school of 200 pupils would have a site of six (6) acres.

2-1.52 For junior high schools, that there be provided a minimum site of twenty (20) acres plus an additional acre for each 100 pupils, in excess of 400 pupils, of predicted ultimate maximum enrollment. Thus, a junior high school of 600 pupils would have a site of twenty-two (22) acres.

2-1.53 For senior high schools, that there be provided a minimum site of thirty (30) acres plus an additional acre for each 100 pupils, in excess of 500, of predicted ultimate maximum enrollment. Thus, a senior high school of 1000 pupils would have a site of thirty-five (35) acres.

2-1.54 It is recommended that the above minimums be increased by fifty percent wherever possible.

2-1.55 In all instances where schools are organized and operate on a 6-6 basis for the accommodation of grades one through twelve, a minimum of thirty (30) usable acres shall be required for the site. For each additional one hundred students or fraction thereof, an additional acre shall be required.

2-1.56 Provision shall be made for additional site area at time of original acquisition in accordance with the above requirements in all instances where additional classrooms are planned for a later date.

2-1.6 For purposes of this section a junior high school is defined as a school operating grades seven, eight and nine, or any combination of them, under a separate organization with a principal assigned the administrative responsibility for the school.

2-1.61 Elementary schools are to be considered as any combination of the first eight grades with the exception as noted above.

2-1.62 In a 6-6 or grade one through twelve organization, provisions should be made for separate playground space for elementary, junior and senior high school students.

2-1.7 The site should lend itself to a pleasing landscaping development. The building should be so located thereon as to allow for any contemplated expansion. The site should provide a gradual slope for drainage, but should not be too steep for playground purposes. It should be easily accessible from major traveled highways, but should not be located so near heavily traveled streets or highways as to constitute a safety hazard. The site should be located away from railroads, airports, factories or other similar areas which could constitute health and safety hazards.

2-1.71 Development of a school site which involves landscape design and land-use planning and the solution to engineering problems such as drainage, sewage disposal, road and walk construction, and grade adjustment should be made concurrently with plans and specifications for building. Such site development should also involve consideration of lawns and shrubs.

CONSTRUCTION PLANNING AND REQUIREMENTS

3-1.0 Materials

The main considerations in material selection are:

3-1.1 Maximum of sound economical construction for each dollar expended.

3-1.2 Efficient buildings requiring a minimum of maintenance.

3-1.3 Use of standard sizes and materials rather than special designs.

3-2.0 Contracts

3-2.1 The board of trustees has the power and duty ". . . To contract for the acquisition, purchase, construction or repair of any school building, other property, or equipment necessary for the operation of the school district. No such contract shall be executed which entails the expenditure of one thousand dollars ($1,000) or more without notice first being given by posting, and publishing twice in the manner required by Section 33-401, Idaho Code. The board of trustees may let the contract to the lowest responsible bidder, or reject any bid, or reject all bids and post and publish notice for bids, as before. If, thereafter, no satisfactory bid is received, the board may proceed under its own direction, subject to the approval of the state board of education."

3-3.0 Structural Design

3-3.1 When working drawings are submitted to the State Board of Education or its agents for approval, they shall be accompanied by a "Statement of Structural Adequacy signed by the architect and/or engineer."

3-4.0 Standards:

3-4.1 The over-all structural design standards shall conform to the current editions of the following:

3-4.11 "American Standard Building Code Requirements for excavation and Foundations," by American Standards Association

3-4.12 "American Standard Building Code Requirements for Masonry," approved by the American Standards Association as American Standards

3-4.13 "Building Code Requirements for Reinforced Concrete," (ACI) approved as American Standard by the American Standards Association.

3-4.14 "National Design Specification for Stress--Grade Lumber and Its Fastenings," National Lumber Manufacturers Association, Washington, D.C. or West Coast Lumbermen's Association.

3-4.15 "National Electrical Code" of the National Standards Association

3-4.16 "Idaho State Plumbing Code"

3-4.17 "Specification for the Design, Fabrication, and Erection of Structural Steel for Building," American Institute of Steel Construction

3-4.18 "Standard Code for ARC and Gas Welding in Building Construction," by American Welding Society

3-4.19 "Standard Specifications for Open Web Steel Joist Construction," adopted by the Steel Joist Institute

3-4.110 "Uniform Building Code," adopted by the Pacific Coast Building Association.

3-4.2 Where there is a difference in standards, the Idaho Code and this Building Manual shall govern. Local Building Codes must be checked for any differences. In cases of differences the more stringent standards shall govern.

3-4.3 The following design data shall be shown on, or submitted with, final drawings or retained in the office of the architect readily accessible to trustees, administrators and other interested persons until after the building is accepted by the trustees: (assume live loads)

3-4.31 gross loads on all vertical structural members, including load bearing walls

3-4.32 stresses for all truss members

3-4.33 working stresses used

3-4.4 Statement of Structural Adequacy Form

3-4.41 The structural design for any school building in the State of Idaho shall be done by a practicing architect or engineer licensed to practice in the State of Idaho. When final drawings are submitted to the State Board of Education or its agents for approval, they shall be accompanied by a "Statement of Structural Adequacy," signed by the architect and/or engineer.

3-4.42 The structural design for __(Name of Project)__ for School District No.___ of __________ County has been prepared by the undersigned. We (or I) do declare that we (or I) are (or am) familiar with the applicable codes of specifications listed in the Idaho School Planning Manual. We(or I) further assume responsibility for and declare that the structural design for __(Name of Project)__ meets the requirements of all governing codes, specifications and regulations.

____
Signature of Architect

____
Signature of Engineer

3-5.0 Construction Details

3-5.1 Entrances and Exits

3-5.11 All main doors leading to the exterior of the building shall open outward and shall be equipped with panic bars and hardware.

3-5.12 All classroom doors shall open outward and be equipped with locks which do not prevent exit.

3-5.2 Number of Exits

3-5.21 Buildings or portions thereof having an occupancy of 50 or more shall have not less than two remotely located exits from each floor.

3-5.22 Buildings, or portions thereof, having an occupancy of 500 to 999 shall have not less than three exits.

3-5.23 Buildings, or portions thereof, having an occupancy of 1000 or more shall have not less than four exits.

3-5.3 Width of Exits

3-5.31 The total width of exits in feet shall be not less than the total occupancy divided by 50. Such width of exits shall be divided approximately equally among separate exits.

3-5.32 The width of exits from any story of a building shall be determined from the occupant load in that story plus one-half the tributary load in the story next above or below, providing the resulting width is not less than that required for the upper story, considered separately. The maximum exit width required for any story shall be maintained until egress is provided from structure.

3-5.4 Doors

3-5.41 The required width of a door opening shall not be reduced more than three inches (3") by any projections.

3-5.42 No required doorway shall be less than thirty-six inches (36") in width.

3-5.43 No leaf of an exit door shall exceed four feet (4') in width.

3-5.44 Every door shall open into a corridor, enclosed stairway, exterior stairway where permitted as a required exit, exterior exit court, or public way.

3-5.45 Every doorway opening into a stairway shall open on a landing within two inches (2") of the floor level. The width of the landing shall not be reduced by more than six inches (6") by the door when fully open. Every landing shall have a dimension measured in the direction of travel equal to the width of the stairway, but such dimension need not exceed four feet (4').

3-5.46 When glass doors are used and have glass panels for walls on either side, such panels shall be easily distinguishable from doors or empty spaces.

3-5.5 Corridors

3-5.51 The minimum clear width of corridors shall be eight feet (8') for single loaded corridors and ten feet (10') for double loaded corridors. If lockers are located in corridors, one foot (1') for each row of lockers shall be added to the minimum width.

3-5.52 When two or more exits are required, exits shall be arranged to make it possible to go either direction from any point in a corridor to an exit or stair.

3-5.6 Stairways

3-5.61 The width of stairways shall be governed by the required width for exits with a minimum of forty-four inches (44").

3-5.62 The rise of every step in a stairway shall not exceed seven and one-half inches (7½") and the run shall not be less than ten inches (10"). The maximum variations in the height of risers and in the width of treads in any one flight shall not exceed three-sixteenths inch (3/16"). Vertical height between landings shall not exceed eight feet (8').

3-5.63 I.C. 39-1901 states: "A fire escape stair shall consist of a continuous stairway enclosed from the highest point to the lowest point by walls of non-combustible materials. Access to the fire escape stair shall be by means of self-closing Class "B" fire doors that open in the direction of exit travel."

3-5.64 Outside steps should be eliminated wherever possible. If such steps are necessary, they should be protected from the accumulation of snow or ice.

3-5.7 Ramps

3-5.71 Ramps may be used instead of stairs but the rise of same shall not be more than one foot (1') for each ten feet (10') of length for outside ramps and one foot (1') for each eight feet (8') of length for inside ramps.

3-5.8 Handrails

3-5.81 Stairways shall have handrails on each side, and every stairway more than eighty-eight inches (88") in width shall have intermediate handrails dividing the stairway into portions not more than sixty-six inches (66") in width.

3-5.82 Handrails shall be placed not less than twenty-six inches (26") nor more than thirty-four inches (34") above the nosing of treads, and ends of handrails shall be returned to the wall at least six inches (6") beyond the first and the last riser. It is recommended that twenty-six inch high handrails be used for elementary schools; thirty inch (30") for combined or junior high schools and thirty-two inch (32") for senior high schools.

3-5.83 Handrails shall be provided for ramps with the same slope allowance for the ramp. Heights and distances apart shall be the same as for stairways.

3-5.9 Ceiling Heights

3-5.91 All ceiling heights shall provide not less than eight feet (8') clear head room except in storage rooms. (The minimum of nine feet (9') is recommended.) Special areas will require higher ceilings.

3-5.(10) Windows

3-5.(10)1 The increased use of artificial lighting and forced ventilation has made the use of windows less important. The construction of buildings with no windows has proven satisfactory in many instances.

3-5.(10)2 Where windows are to be used for either ventilation or lighting the requirements will be governed by those sections.

3-5.(11) Heating Plants

3-5.(11)1 Boiler rooms shall not be located under any space occupied by pupils and shall have an outside entrance. Provisions for easy removal of ashes should be made as well as some plan for possible removal and replacement of boilers.

3-5.(11)1 Exits from heating plants should not open directly into any space occupied by pupils but if necessary, such exits shall be provided with automatic or self-closing Class "B" fire doors.

3-5.(12) Area Below Grade

3-5.(12)1 All classrooms and other student room areas below grade are subject to State Board of Education approval.

3-5.(12)2 All walls which extend below grade shall be dampproofed or waterproofed to a point at least one foot above grade, dependent on local conditions.

3-5.(12)3 Wherever wood construction is located near the soil, proper provisions shall be taken to prevent damage from dampness, rotting or the action of insects.

3-5.(12)4 Permanent access shall be provided for all roofs, attics and excavated areas.

3-5.(13) Specifications

3-5.(13)1 Specifications, generally speaking, should be written to protect the school district. Expenditures of school district funds for school buildings should be based on proven acceptable practice. Specifications should be clear, specific and easily understood by the average trustee. The type and construction of each building will determine the specifications. Specifications and plans should be complementary. The plans, through the use of a series of drawings, show the building design. The specifications provide the requirements and specific directions for the development and completion of plans. Specifications should, generally speaking, take precedence over the plans when questions relative to construction arise. In order to avoid misunderstanding and to be certain the district is getting what it is paying for, a clear and complete set of specifications is necessary. See appendix for list.

3-5.(13)2 It is recommended that the Architect require under specifications special conditions that the General Contractor prepare a realistic construction progress schedule. This schedule should be broken down in all the various construction components of the school building and into proper sequence for efficient coordination of materials and sub-contracts.

3-5.(13)3 A properly prepared and followed schedule will prove of invaluable assistance to school districts in determining management decisions.

SECONDARY SCHOOL PLANNING

4-1.1 Planning the secondary school in Idaho presents many critical and perplexing problems to the school administrator, school board and architect. The changing requirements of curriculum and activity are aggravated by the need for economy of operation, maintenance and initial cost. The buildings which are planned today will have to be used for school buildings for twenty-five to fifty years and should be planned flexible enough to allow for the inevitable changes. Secondary school buildings which are planned and constructed without this change in mind may limit the program and prevent the desirable changes or they may cause added expense in the future for major remodeling or expansion.

4-1.2 It is probable that during the next few years many new secondary school plants will be provided in Idaho and many more will be needed in order to keep up with the growing curriculum requirements and the increased number of students. These new plants should be planned to provide a long range economy, realizing that **CHEAPNESS IS NOT NECESSARILY ECONOMY.** Added to the increasing birthrate is the fact that in the past many students went directly from elementary school to the labor market, but now paractically all children attend and graduate from high school. These students are of many varied capabilities and interests. High school was merely a college preparatory school at one time and has now become a pre-vocational school, a college preparatory school and a preparatory school for life wherein a student may be prepared to face life with the ability to cope with the problems therein.

4-1.3 With these things in mind, we begin to realize the complex problem and the necessity to provide the best tool for the money to be spent. Proper consideration must be given all phases of a project from proper access, circulation, etc., to aesthetics.

4-1.4 The following suggestions and requirements should be tempered by wisdom and good judgement. The Department of Education recognizes that each project has separate and distinct problems which are not solved by general statements. Therefore, each project must be judged on its own merits and the solutions may be as varied as these merits.

4-2.0 Circulation Areas

4-2.1 One of the most important features of the secondary school is the location of the different departments and the flow of traffic to and from these departments. We must realize that the students move from class to class and the time spent in this circulation is lost as far as learning is concerned. Therefore, great care should be taken to properly locate the departments and provide corridors and circulation areas for the speedy change of classes.

4-3.0 Administration

4-3.1 Each secondary school plant shall have an administrative suite consisting of the following: Public office and waiting space, principal's office and fire-safe storage.

4-3.2 It is recommended that, in addition to the required area, there be counseling areas, offices for additional administrative personnel, work areas, faculty areas and health suite.

4-3.3 The administrative area should be located near the public areas and close to the center of the school plant. In small schools it is important that visual supervision of student areas, circulation areas, etc., be provided from the administrative suite.

4-3.4 Counseling offices should be provided for the guidance and counseling of all students and should be adjacent to, but not a part of, the administrative suite. Separate counseling offices should be provided for boys and girls. Counseling offices should contain a minimum of one hundred twenty (120) square feet and have an additional waiting space for students of approximately the same size. The waiting space may serve several offices.

4-3.5 A health suite should be provided close to the administrative area and also close to the public space. This suite should be accessible for parents or others who may come to the school to take the sick student home. The suite should be divided for boys and girls and should have space for a desk for the school nurse, examining room and isolation rooms. This area should be provided with adequate toilet facilities and each examining room should have hand washing facilities. Consideration should be given to the use of the health suite for public health purposes.

4-3.6 A faculty room and work room area should be provided near the administrative suite. Ideally, a room allowing twenty-five (25) square feet per faculty member would allow proper space for rest and relaxation, faculty meetings and study. Adjacent to this room should be toilet facilities for both men and women so situated as not to cause embarrassment to the faculty or visitors. The faculty room should be furnished with lounge furniture and writing tables in an informal home-like atmosphere.

4-3.7 A teacher's work room and storage area should be provided. In small schools this area could be a part of the faculty room or in an alcove off that room. A sink with hot and cold water should be provided in a cabinet with not less than twenty (20) square feet top area. Provision should be made for storing supplies which may require a storage depth of thirty (30) inches. Economy can be effected if the teacher's work room is close to the general school office so that duplicating machines, etc., may be used by both.

4-4.0 Classrooms

4-4.1 Classrooms, for the purpose of this manual, are divided into two divisions - regular and special. Regular classrooms are those used for instruction in English, social sciences, mathematics, foreign languages, etc. Special classrooms include libraries, chemistry, biology, physics, homemaking, art, industrial arts, etc., together with special areas such as gymnasiums, cafeterias, auditoriums, etc.

4-5.0 Regular Classrooms

4-5.1 The number of regular classrooms will vary with the enrollment and the offering of the curriculum. However, 75% of the regular classrooms will probably need to be standard size.

4-5.2 Standard size rooms shall have not less than eight hundred (800) square feet of floor area. Rooms smaller than standard shall have not less than four hundred eighty (480) square feet of floor area.

4-5.3 In the case of small secondary schools where the total enrollment is less than one hundred fifty (150), the rooms may be smaller than the standard size shown above. All such cases shall be calculated on the basis of twenty-five (25) square feet per student for the anticipated student load, but shall have no less than four hundred eighty (480) square feet.

4-5.4 All classrooms shall be provided with chalkboards. It is recommended that regular classrooms have a minimum of twenty (20) lineal feet of chalkboard with the exception of those rooms to be used for mathematics. These rooms should have a minimum of thirty (30) lineal feet. All chalkboard should have a height of not less than forty-two (42) inches and should be set with the chalk tray at thirty-six (36) inches above the finished floor.

4-5.5 All classrooms shall be provided with tackboard and shall have provision for hanging and display of maps and pictures. It is recommended that a minimum of twelve (12) lineal feet of tackboard the same height as the chalkboard be provided. A map rail with tackstrip at the top of all chalkboards is recommended and in addition to this, an aluminum reglet installed in the plaster or masonry could be advantageously used.

4-5.6 It is recommended that all classrooms be provided with bookshelves containing not less than twelve (12) lineal feet of adjustable shelving not including the top.

4-5.7 Each classroom or teaching area should be provided with a lockable teacher's closet which should be large enough to provide adequate coat hanging space, storage space, and adjustable shelves and file drawers.

4-5.8 All classrooms should be provided with additional storage space for instructional materials peculiar to the class using the area. Consideration should be given to storage of globes, maps, charts, etc., and display of these items in rooms requiring them.

4-5.9 In the design of the classroom special concern should be paid to the fact that each room is considered an audio visual classroom. The type of projectors to be used in the school should be checked and the rooms so designed that there is proper ceiling height and that there are no ceiling obstructions to hinder the use of audio visual teaching aids.

4-5.(10) Ceilings of all classrooms and circulation areas should be acoustically treated.

4-6.0 Special Classrooms and Facilities

4-6.1 Library

4-6.11 All secondary schools shall be provided with a library. The library or materials resource center should be the center of the instructional area. It is wise to locate the library where students will continually pass it on the way to classes. Consideration should also be given to the possible community use of the library area in its location.

4-6.12 Adequate library work space and charging area should be provided for the repair and distribution of materials. The library should also provide adequate storage, either on shelves or in a separate room for back issues of periodicals, little-used materials, etc.

4-6.13 It is recommended that schools having an enrollment of less than three hundred (300) students provide a library of not less than one thousand two hundred (1,200) square feet. Schools with enrollments of more than three hundred (300) students should provide a library reading room with floor space equal to a seating capacity of one-sixth of the school enrollment with an allowance of twenty-five (25) square feet of space per pupil.

4-6.14 In addition to above, consideration should be given to space for browsing, seminar rooms and meeting rooms. Storage space for films and records with preview rooms for each are recommended.

4-6.15 Library Equipment

4-6.151 Shelving: A minimum of one (1) lineal foot of open, adjustable shelving should be provided for each student enrolled in the school. Seventy-five percent of the shelving should be eight (8) inches deep; ten percent, twelve (12) inches deep; and fifteen percent, fifteen(15) inches deep.

4-6.152 Adequate open storage should be provided for all periodicals anticipated but not less than thirty (30) lineal feet. Provision should also be made for accessible storage of newspapers.

4-6.153 Shelving should not exceed seven (7) feet in height if placed against the wall and shall be securely fastened to the wall. All free standing shelving should be double faced and should not exceed six (6) feet in height.

4-6.154 Tackboard and Display: Adequate tackboard and display area should be provided in each reading room. It is suggested that a display area be provided at least eighteen (18) inches deep for display of items or setups which do not lend themselves to flat display. These display areas should be protected from the students with glass doors which can be locked.

4-6.155 Furniture: Size and type of library furniture should be determined prior to completion of the working drawings. Table and chair heights should be considered with a majority of the tables being twenty-nine (29) inches and thirty (30) inches in height but a few tables should be provided of twenty-six (26) and twenty-eight (28) inches in height. Consideration should be given to the use of study carrels for individual student study areas.

4-6.156 Charging Desk: A charging desk area with space for filing and checking books should be provided. Desk should be counter height and designed to accommodate charging trays for book circulation cards, adequate shelves for housing quick reference and reserve volumes, shelves or bins to hold returned books prior to slipping, cash drawer for fines, supply drawers and drawer space for record filing.

4-6.16 Audio Visual Area

4-6.161 Space should be provided for storage and preview of audio visual equipment and materials. Preview rooms may be as small as sixty-four (64) square feet, but should have adequate ventilation and provision for darkening. Storage rooms should be a minimum of sixty-four (64) square feet.

4-6.17 Library Work Room

4-6.171 A work room should be provided for the librarian. This room should have a sink and hot and cold water and should have adequate work table space for repair of books and preparation of display materials. Provision should be made for shelving and other storage area including file drawers for correspondence, etc. Library work room should contain a minimum of one hundred fifty (150) square feet.

4-6.18 Physical Characteristics

4-6.181 The library should be a warm, inviting room. Colors of walls and woodwork should be carefully selected for ease of maintenance and for beauty. Floor coverings should be of a sound-absorbing material and all ceilings shall be acoustically treated.

4-6.182 Library work room and charging desk area should be so located to provide supervision of all areas and be close to the main entrance doors. Display areas should be located near this charging area.

4-6.2 Business

4-6.21 With the increased activity in the business field, an increased need for business education is indicated. New machines and techniques are being introduced into the business world at all times. Flexibility will be required in the design of business suites to allow for this change. There are, however, certain basic business machines and techniques which are unchanging to be considered.

4-6.22 The business education department should be located near the administrative section of the building so that special machines and equipment can be used by both facilities.

4-6.23 It would be wise to locate the publications offices close to the typing room also so that typewriters could serve dual purpose.

4-6.24 All business education rooms in which instruction or practice in machine operation is offered shall be acoustically treated.

4-6.25 Typing: Size of the typing room should be governed by the size of the class involved. Room should be sized at the rate of thirty-five (35) square feet for each student. Each typing room should have at least sixteen (16) lineal feet of four (4) foot high tackboard and twelve (12) lineal feet of four (4) foot high chalkboard. Proper storage should be provided with a cabinet eight (8) feet long and eighteen (18) inches deep by thirty-six (36) inches high.

4-6.26 Bookkeeping: Bookkeeping room should be of a size to contain the number of students in the largest class at the rate of thirty-five (35) square feet per student. Sixteen (16) lineal feet of tackboard and twenty (20) lineal feet of chalkboard is recommended. It is suggested that each student enrolled in the bookkeeping classes be provided with a place for storing individual materials at least fifteen (15) inches wide by ten (10) inches high by fourteen (14) inches deep.

4-6.27 Office Practice Rooms: Should be sized on the same basis as the bookkeeping room but should have a minimum of sixteen (16) lineal feet of chalkboard. Office practice rooms should be equipped with a work counter and storage cabinet of not less than sixteen (16) square feet top area and should have a sink with hot and cold water.

4-6.28 General Classrooms: Classrooms for shorthand, etc. should have the same requirements as other general classrooms of the building.

4-6.3 Science

4-6.31 The science facility of the secondary school will vary considerably between the junior high school and the senior high school. The junior high school general science course involves all of the sciences; physics, chemistry and biology whereas the high school will have separate courses for each of these. For this reason the design of the science facility will be different in the two cases.

4-6.32 Demonstration Tables: Care should be taken in the design of the demonstration tables in the science rooms for the students to be able to see the experiment being performed as well as the chalkboard.

4-6.33 Junior High School Science: The junior high school general science room shall contain not less than nine hundred (900) square feet exclusive of storage areas. Storage and preparation area should be provided adjacent to the science room and should have a sink with hot and cold running water. The general science room shall be equipped with a demonstration table at least thirty-six (36) inches by sixty (60) inches and be fitted with an acid-proof sink and hot and cold water. The demonstration table should also be supplied with gas, electrical, and compressed air connections. There should be a minimum of twenty (20) lineal feet of chalkboard and sixteen (16) lineal feet of tackboard furnished for the general science room.

4-6.34 Senior High School Science: High school science areas should contain rooms for biology, chemistry and physics and for other science courses, such as physiology, that are offered by the individual school. These rooms should be grouped together so that there could be dual use of equipment and so that plumbing, gas piping, etc. can be economically installed. If the science department is located on the first floor and the floor is a concrete floor on grade, it would be advisable to install all wiring and piping in a utility tunnel for easy access for repair and replacement of these services.

4-6.341 Biology Rooms: Biology rooms shall have a minimum area of twelve hundred (1,200) square feet and shall be of the combination classroom and laboratory type. Biology classrooms should be provided with tables for student use, preferably two students to the table. These student tables need not be provided with hot and cold water, sinks or electrical connections unless it is anticipated that the room be used for other sciences.

4-6.3411 Biology rooms shall be provided with a teacher's demonstration table which shall include a sink with hot and cold running water, gas and electricity. There should be at least twenty (20) lineal feet of chalkboard and twenty (20) lineal feet of tackboard in each biology room. There should also be display space and space for such items as terrariums, aquariums, etc., together with the necessary facilities for them.

4-6.3412 A storage and preparation room of ninety-six (96) square feet minimum shall be provided adjacent to the biology rooms with necessary shelving and work spaces. If possible, a greenhouse should be provided in connection with the biology suite.

4-6.342 Chemistry Room: Chemistry rooms shall have a minimum area of fourteen hundred (1,400) square feet and should have space for lecture and experiment areas. Chemistry student tables should be arranged around the walls of the room so that there will be large areas in the center of the room for lecture or demonstration. All student tables shall be provided with hot and cold water, sink, gas and electricity.

4-6.3421 The chemistry room shall be provided with a teacher's demonstration table which shall be equipped in the same manner as the student tables. There should be a minimum of twenty (20) lineal feet of chalkboard and twenty (20) lineal feet of corkboard so located to be of the best use to the teacher. Consideration should be given to the use of sliding or retractable chalkboards for this room. An adequate amount of display space and a lockable key case for student cabinet locks should be provided.

4-6.3422 A preparation and storage room shall be provided of a minimum size of one hundred (100) square feet. This room should have a sink, hot and cold running water, electricity, gas, and storage cabinets. Locking cases should be provided in the storage room for the storage of chemicals.

4-6.343 Physics: Physics room shall have a minimum area of fourteen hundred (1,400) square feet and should have space for lecture and demonstration, and experiment areas. Physics tables should be located in the center of the room so that they may be accessible for experiments from all sides. Each student table shall be equipped with A.C. power. A laboratory sink should be available in close proximity to the student tables to serve experiments to do with specific gravity, etc.

4-6.3431 The lecture area of the physics room shall have a minimum of twenty (20) lineal feet of chalkboard and sixteen (16) lineal feet of corkboard. Display cases and storage cases for equipment should be provided as required by the faculty and administration.

4-6.3432 A preparation and storage room shall be provided of a minimum size of one hundred (100) square feet and should be furnished with a sink, hot and cold running water, gas and electrical outlets. Storage cases should be equipped with locks for storage and valuable equipment and supplies.

4-6.344 Combined Science Rooms: In the case of a small secondary school where the science courses are all offered in the same combined laboratory and classroom, the minimum size of the room shall be computed on the basis of fifty (50) square feet for each student in the largest class to be housed and in no case shall the room be smaller than twelve hundred (1,200) square feet. Each laboratory shall be provided with a separate storage and preparation room of not less than one hundred (100) square feet floor area. Minimum requirements of the biology, chemistry and physics rooms shown above shall be complied with in regard to equipment and facilities.

4-6.345 Wherever possible, it would be desirable to include a photographic darkroom in the science suite. This darkroom should contain at least forty-eight (48) square feet of area and should be equipped with hot and cold running water, sink, counter, and storage space. The darkroom should be windowless and be provided with mechanical ventilation.

4-6.346 It is also desirable to include special plant and animal rooms in connection with the biology or physiology rooms both for display and experimentation. These rooms should each be considered individually and proper light, heat, cooling, and ventilation be provided.

4-6.347 Determination of the types of furniture and other equipment should be made prior to the completion of the working drawings to eliminate possible connection and installation problems.

4-6.4 Music Education

4-6.41 Music education has taken a permanent and important place in the secondary school program and therefore requires a great deal of study in the design of these rooms. Consideration should be given in all secondary music departments for chorus, music appreciation, orchestra and band, practice rooms, storage rooms, music libraries, instrument repair rooms, uniform and robe storage rooms, offices, recording rooms, etc. In most instances all of these facilities will not be possible but dual purpose of space can give areas which will provide for this type of use. It is highly recommended that a separate chorus room and band and orchestra room be provided in the music suite. This is particularly important when more than one music instructor is used.

4-6.42 Music departments should be located in an area of the school so that the sound will not be detrimental to other instructional areas. It is recommended that the music department be located adjacent to the auditorium and if possible, on the level of the auditorium stage. Music rooms should also be located where direct access to gymnasiums and athletic fields are provided. It is also important to locate music departments so that they are on or near ground level. Music departments should never be located on the second floor of buildings. Where separation of the music departments from other instructional areas of the school is not possible, all music department rooms shall be completely insulated to reduce sound transmission to the other areas of the school. It is recommended that a great deal of study be given this sound insulation and the use of vestibules, sound-proof doors, etc. should be considered.

4-6.43 The size of the music room should be large enough to accommodate 25% of the enrollment of the school at a minimum of twenty (20) square feet of floor space per person, but in no case should this room contain less than nine hundred sixty (960) square feet. In schools where a separate chorus room is used, the chorus room should be large enough to accommodate fifteen to twenty percent of the total student population with a minimum of twenty (20) square feet of floor space allowed per pupil. The rooms should also be so arranged to allow space at the front of the room for piano, recording instruments, radio, record files and music storage cabinets.

4-6.44 Where a separate band and orchestra room is planned, it should be sized to accommodate a minimum of fifty pupils. Maximum size of band or orchestra is usually ten to twelve per cent of the total enrollment. It is recommended that the minimum size of the band and orchestra room shall be not less than twelve hundred (1,200) square feet and should have enough area to accommodate the maximum number of band or orchestra members at the rate of twenty (20) square feet of floor space per pupil. Provisions shall be made in the band room for direct access to the instrument storage room, the instructor's office, the music library and other rooms.

4-6.45 If it is possible, the music department should provide practice rooms for individual students or small groups. These practice rooms should be not less than six (6) by eight (8) feet in dimension nor more than ten (10) by twelve (12) feet and shall be acoustically treated and isolated from each other with sound proof walls and should have doors which are provided with glass. These practice rooms also may double as individual dressing rooms if the music department is located adjacent or close to the auditorium and stage area. Consideration should also be given to storage of uniforms and robes, and dressing rooms for both boys and girls. This could be easily accomplished if the athletic dressing rooms and/or stage dressing rooms were located close to the band and choral areas.

4-6.46 Risers should be provided in all band, orchestra and chorus rooms and should be not less than six (6) inches or more than eight (8) inches in height. It is recommended that risers be placed in a semi-circular area and not less than three risers of forty-eight (48) inch width be used in each room. If movable risers are used, it may be wise to so design them that they can be moved on to the auditorium stage for use in concerts and other activities. Consideration should be given in the design and location of the music facility so that it can be used for community activities. If this is the case, the music department should be provided with exterior access and should have direct access to toilet facilities and drinking fountains without access to other parts of the building. It is not recommended, however, that drinking fountains be provided in the music room itself.

4-6.47 If it is necessary to use such facilities as multi-purpose room, gymnasium, auditorium or school lunch rooms for music instruction, the following provisions should be made:

4-6.471 Adequate storage rooms with locks for pianos and other large instruments.

4-6.472 Equipment should be provided in these facilities as though the facility were used solely for music instruction.

4-6.473 Walls and ceilings should be acoustically treated and if the area is not isolated from the regular classroom section of the building, then such rooms should be sound-proofed.

4-6.48 The music room should be provided with not less than twenty (20) lineal feet of chalkboard and sixteen (16) lineal feet of tackboard. The chalkboard and tackboard shall be so located as to be in view of the students when they are sitting in their normal positions in the room.

4-6.5 Art Department

4-6.51 The secondary school art program should seek to provide experimental opportunity in many of the specialized areas of the art field and can often be implemented by cooperative activities of other instructional areas. For this reason art classrooms should be located on the first floor and should be located near the industrial arts and homemaking department classrooms. The art classrooms should provide a space for a maximum class of twenty-five (25) pupils and should contain a minimum of one thousand eighty (1,080) square feet with more area recommended if possible. The size, location and type of furniture, cabinets, worktables, sinks and other equipment should be determined prior to the completion of the working drawings. Consideration should be given to the storage of art materials and to the individual storage of student projects for the total number of students enrolled in the art program.

4-6.52 In designing art room cabinets consideration shall be given to the size of materials to be stored and particularly to the large sheets of paper which will be involved in this work. Each art room should be provided with not less than twenty (20) lineal feet of tackboard and twelve (12) lineal feet of chalkboard and a minimum of twelve (12) lineal feet of adjustable shelving for bookcase of equal size. Consideration should be given to the location and installation of potter's wheels, kilns and other provisions for working with clay and with other art media.

4-6.53 An area outside of the room, but adjacent thereto, should be provided with display cases and tackboard for the display of student art work or of traveling exhibits. It may also be wise to provide areas in the corridors of the building or the school lunchroom for display of this type.

4-6.6 Homemaking Department

4-6.61 Homemaking or family life education today and tomorrow includes a wide variety of educational experiences and activities - the training of girls for the vocation of homemaking, the training of girls in marketable skills, and the retraining of adults. Therefore, greater depth must be planned in teaching programs, making it necessary to build departments adaptable to this change. The department should provide a setting for both formal and informal learning for all age groups - junior high, senior high, and adults.

4-6.62 Provisions for study in the following areas should be provided: child care and development, textiles and clothing, food and nutrition, family health, housing, home furnishings and equipment, family finance, and consumer education.

4-6.63 **Size**: the size of homemaking departments is usually determined by the number of students contemplated and the number of instructors. The following is a suggested pattern which may be followed in planning homemaking departments:

1 teacher unit -	24 pupil maximum per period	50 ft. x 24 ft.
2 teacher unit -	48 pupil maximum per period	80 ft. x 24 ft.
3 teacher unit -	72 pupil maximum per period	120 ft. x 24 ft.
4 teacher unit -	100 pupil maximum per period	160 ft. x 24 ft.

4-6.631 A combination room which includes equipment for teaching all areas of homemaking is recommended for a one-teacher department. Two rooms are necessary for a two-teacher program, etc.

4-6.632 Regardless of size or type (all-purpose or apartment type), the department should be kept separate from school lunch and/or community kitchen projects.

4-6.64 **Location**: Several basic factors should be considered in locating the homemaking department. Future expansion, easy access for delivery of supplies and waste disposal, and access of pupils and adults for day and evening activities are important. It is recommended that homemaking departments be located on the first floor of the building, preferably in a separate wing where the constant moving of pupils and equipment and the odors from the kitchen will not affect other students.

4-6.65 **Equipment and Facilities**: Where gas is available, adequate provision for both gas and electrical equipment should be made.

4-6.651 A lavatory and water closet may be desirable, especially in a complete homemaking suite.

4-6.652 A supplementary water heater will be necessary in most homemaking departments.

4-6.653 Handwashing facilities shall be located in or immediately adjacent to the food preparation area.

4-6.654 Provision shall be made for disposal or storage of garbage and trash. The installation of a disposal unit in one or more sinks should be considered.

4-6.655 Exhaust fans shall be installed in all food preparation rooms.

4-6.656 Cabinets and food storage areas shall be installed in such a manner as to prevent the entrance of rodents and vermin.

4-6.657 Screens, shall be installed on all ventilating windows and exterior doors.

4-6.658 A minimum of six (6) feet each of chalkboard and tackboard shall be provided for each teaching unit.

4-6.66 Decoration: Homemaking departments should be planned and furnished with the idea of creating ideal family living situations and environment. Lighting, wall finishes, flooring, arrangement of equipment and furniture, and interior decorating should all contribute to this idea.

4-6.67 Consultative Service: It is recommended that the Homemaking Division of the State Department of Vocational Education be contacted during the early stages of planning for suggestions and recommendations concerning the homemaking department and its special equipment.

4-6.7 Vocational Agriculture Facilities

4-6.71 Facilities for Vocational Agriculture programs should be planned after carefully reviewing present and future community needs in agricultural education. Provisions for study should be provided in the following areas: Livestock and dairy production, crop production, leadership training, supervised farming program, farm management and agriculture business, farm mechanics, adult programs.

4-6.72 The following information includes basic building needs and other planning information necessary to adequately support a local program of Vocational Agriculture in Idaho.

4-6.73 Classrooms: One classroom should be provided for each instructor in the department. Thirty-five (35) square feet of floor space shall be provided for each student in the largest class to use the classroom. A minimum of seven hundred twenty (720) square feet shall be required. Additional laboratory and storage space should be provided in the classroom.

4-6.731 When two or more classrooms are provided, it may be highly desirable to make provision for them to be opened into a large area for large group meetings.

4-6.732 The use of audio-visual equipment should be considered in planning all classrooms.

4-6.733 A minimum of twelve (12) feet each of chalkboard and tackboard shall be provided in each classroom.

4-6.734 The classroom should open directly into the shop.

4-6.74 Farmshop: One hundred (100) square feet of floor space exclusive of storage space, workbenches, power tools, and other equipment should be provided for each student in the largest class.

4-6.741 A tool room convenient to all parts of the shop is recommended.

4-6.742 Floors should be made of concrete which should be treated for hardening.

4-6.743 At least one floor drain with a clean-out sludge pit shall be provided in the shop. If only one, it should be located inside the large entrance door and the floor sloped to it.

4-6.744 An entrance door high enough and wide enough to admit large farm machinery should be provided. This should be an overhead door about twelve (12) feet high and fourteen (14) to sixteen (16) feet wide necessitating a ceiling height of about fourteen (14) feet. A standard-sized door should be placed beside the large entry door.

4-6.745 Care must be exercised in placement of shop windows to permit proper placement of tall equipment as well as power machinery, etc. This makes complete plans showing location of all equipment essential.

4-6.746 Proper ventilation is essential in all areas of the shop, but especially in the painting and hot metal areas.

4-6.747 A locker for storage of shop clothing, etc., should be provided for each student enrolled in vocational agriculture.

4-6.748 Adequate sanitary facilities including lavatories, toilets, urinals, towel dispensories, etc., should be provided in or adjacent to the shop area.

4-6.749 An area for parking farm machinery outside of and adjacent to the farm shop should be provided. This area should be about twenty-four hundred (2,400) square feet in area and should have some type of hard surface. This parking area should be enclosed with a fence preferably sight proof.

4-6.75 Office: An office should be provided for each instructor to give privacy for conferences while allowing visual supervision of both the classroom and shop. The office must be large enough for office furniture and storage of teaching materials.

4-6.76 Consultative Service: Consultative services from the State Supervisory Staff for Agricultural Education, are available to local school districts when planning new or revising vocational agriculture facilities. It is recommended that the State Supervisor for Vocational Agriculture be contacted during early stages of planning, for suggestions and recommendations concerning special equipment and facilities for vocational agriculture.

4-6.8 Industrial Arts

4-6.81 The major function of the industrial art shop is to provide opportunities for meeting the common needs of all youth and specialized needs of certain individuals who can benefit from these experiences because of particular interests and abilities. The industrial education should present an opportunity for introduction to a broad variety of experiences and emphasis is placed on the general knowledge, variable interest in use of tools and materials and increased skill in the use of hands.

4-6.82 There are many types of activities which could be included in the industrial arts program of the school and consideration to the curriculum should be given in the design of the industrial arts suite. Some of these areas are as follows: woodworking, jewelry, ceramics, plastics, leather work, metal work, planning and drafting, electricity, radio and communication, graphic art, printing, photography, textiles, masonry, plastering, plumbing, steam fitting, refrigeration, sign painting, and many others.

4-6.83 THE 1963 PASSAGE OF H. B. 4955 MAY CREATE MORE INTEREST IN, AND THEREFORE, MORE EMPHASIS ON THIS TYPE OF TRAINING.

4-6.9 Auditoriums and Stages

4-6.91 The primary function of the school auditorium is to serve as a center for student body gatherings and assemblies of various types. In many of Idaho's small communities the auditoriums also serve as a center of community activities. Larger cities have cooperated with school districts in providing auditoriums for both school and community use. It appears to be a wise practice for those who are responsible for school building planning to always consider, not only school, but community needs when planning auditoriums.

4-6.92 In some instances auditoriums, because of financial limitations, must also serve as gymnasium, study hall, music room and school lunchroom. This is not a desirable practice, particularly at the senior high school level and should be avoided wherever possible. If such practices are necessary, it is recommended that the stage be located on one side of the gymnasium and that adequate storage for piano, folding chairs, and other equipment be provided.

4-6.93 Provision should be made in all auditoriums for the full use of visual aids. A large screen, projection or control booth, and built-in speaker conduit should be provided.

4-6.94 Size: Determination of seating capacities for auditoriums requires serious consideration. The functional use must be thoroughly studied to avoid construction of an auditorium which is too large or too small. Auditoriums should be large enough to seat the entire student body both present and anticipated. However, the expense of constructing an auditorium for the largest crowd anticipated in a community may not be wise usage of school funds.

4-6.941 Large schools will probably find it wise to provide both an auditorium and a little theater for school use.

4-6.95 Location: Auditoriums shall not be located above the ground floor.

4-6.951 If possible the auditorium should be located away from the main classroom portion of the building and should be easily accessible for patrons without using the main part of the building.

4-6.952 Public toilets should be provided for men and women. If small schools find it impractical to provide separate facilities, planning should include location of regular toilet facilities close to the auditorium.

4-6.953 Dressing rooms should be provided adjacent to the stage and equipped with costume racks, benches, lockers, mirrors, make-up storage cabinets, and lavatories with hot and cold water. Easy access to toilet facilities must be considered. Again small schools may find it more practical to use classrooms for dressing rooms and this will effect the over-all planning.

4-6.954 Ticket offices and provision for checking or at least hanging wraps should be considered.

4-6.955 Balconies are not recommended for school auditoriums. However, if a balcony is necessary it must conform to all regulations governing seating, aisles, etc., for the main floor and should not provide seating in excess of twenty-five (25) percent of that provided on the main floor.

4-6.96 Aisles:

4-6.961 Width: Every aisle shall be not less than three (3) feet wide if having seats only on one side and not less than three (3) feet six (6) inches wide if having seats on both sides. Such minimum width shall be measured at the end farthest from the foyer and shall be increased by no less than one and one-half (1½) inches for each five (5) feet in length toward the foyer.

4-6.962 Aisles shall be so located that there will not be more than six (6) intervening seats between any seat and the nearest aisle.

4-6.963 The slope of aisles shall not exceed one (1) inch fall in eight (8) feet.

4-6.964 Cross Aisles: When aisles terminate in a cross aisle instead of a foyer, the width of the cross aisle shall be not less than the sum of the width of the widest aisle plus fifty (50) percent of the total width of the remaining aisles leading thereto.

4-6.965 Distances to nearest exit: The line of travel from any seat to an exit door by an aisle shall not be more than one hundred fifty (150) feet.

4-6.97 Seating: Fixed seating shall be required in all auditoriums with sloping floors. Movable seats are not recommended for auditoriums but will, of course, be necessary for multipurpose rooms.

4-6.971 The spacing of seats from back to back shall be no less than thirty-three (33) inches nor less than twenty-seven (27) inches plus the sum of the thickness of the back and the inclination of the back.

4-6.972 Width: The width of any seat shall be not less than eighteen (18) inches. The same spacing should apply to movable seats.

4-6.973 Space should be provided between the permanent seats and the stage for band and orchestra groups. Orchestra pits, as such, should not be constructed in school auditoriums.

4-6.98 Stages: All stages should be located convenient to the functions of the instructional program which use this facility most often. Stages, dressing rooms, and classrooms should be arranged so that traffic from one to the other will not pass through the auditorium itself.

4-6.981 Flooring for stages should be of soft wood.

4-6.982 Steps should be provided from the stage to the floor of the auditorium.

4-6.983 It is highly recommended that the stage be completely finished with lighting and stage curtains as designed in the original contract. Too often these items are omitted to be furnished by others at a later date and are then found to not fit the structural or esthetic requirements of this area. If these items are eliminated from the contract, care must be taken that proper backing, circuits, supports, etc., be provided and that the future equipment be installed in accordance with the design and specifications under the original contract.

4-6.984 Stage Dimensions: The following are recommended stage dimensions:

SEATING	STAGE	PROSCENIUM		TOTAL CLEAR
CAPACITY	DEPTH	WIDTH	HEIGHT	STAGE WIDTH
200 or less	18'	20'	14'	Width of auditorium
Under 300	20'	22'	16'	Width of auditorium
Under 400	22'	24'	18'	48'
Under 500	25'	26'	18'	52'
Under 600	25'	30'	20'	60'
Under 750	25'	35'	20'	62'
Under 1000	25'	40'	20'	68'

4-6.(10) Physical and Health Education Facilities

4-6.(10)1 Physical education and health education are an integral part of the general education program of the schools. The objective is to improve the health and physical well-being of ALL students and sufficient space for this facility should be provided in the secondary school plant.

4-6.(10)2 Combination auditoriums-gymnasiums are not recommended, however, lack of finances may force the use of this type of building.

4-6.(10)3 Gymnasium: The use of the gymnasium as a community center and local community interest in basketball and other interscholastic sports has been such that the gymnasium is often considered first in school building planning. It should be remembered that gymnasiums built first for spectators, secondly for the athletic programs, and lastly for educational needs are expensive to construct and maintain and are not as efficient as gymnasiums where physical education needs receive first priority.

4-6.(10)31 No gymnasium or gymnasium combination shall be located above the ground floor.

4-6.(10)4 Dressing Rooms: The dressing rooms should be located adjacent to the gymnasium floor with entrance to the floor provided by corridors or vestibules other than general corridors. They should also be located for direct access to the outside athletic and physical education areas if possible.

4-6.(10)41 Adequate space must be provided to take care of the largest number using dressing rooms at any one time and separate rooms for visiting teams should be provided.

4-6.(10)42 The serious problem of proper ventilation and drying discourages the use of basement areas under the playing floor or spectator seating.

4-6.(10)5 Storage Space: Adequate storage space must be provided for all athletic and physical education equipment including uniforms and practice clothing. Store rooms separate from those for physical education should be provided for athletic equipment.

4-6.(10)51 Lockers: An individual basket or other type of ventilated container should be provided for each individual using the dressing room. These baskets may be stored in a separate room which must be well ventialted and heated for thorough and quick drying.

4-6.(10)52 Lockers large enough for storing street clothes should be provided with enough lockers to furnish one for each of the largest group using the dressing room at any one time.

4-6.(10)53 Racks for hanging athletic equipment prove more satisfactory than lockers, but some security must be provided for each individual's equipment.

4-6.(10)6 Shower Rooms: One (1) shower head for each three (3) students in the largest group to use the shower room should be provided. Twelve (12) feet of floor space for each shower head plus adequate walking space is recommended for each shower room. Shower heads should be spaced at least three (3) feet six (6) inches apart. The minimum width of shower rooms should be nine (9) feet six (6) inches for those with shower heads on both walls and six (6) feet six (6) inches for those with showers only on one wall.

4-6.(10)61 Drying Rooms: A drying room or drip passage should be provided between the shower room and each dressing room. This area should have no less than fifteen (15) square feet of floor space for each shower head and have doorways no less than four (4) feet wide leading directly into the shower room and dressing room.

4-6.(10)62 Each shower and drying room shall be provided with floor drains and the floors shall be sloped to the drains. These floors should be made of non-slip ceramic quarry tile or terrazzo.

4-6.(10)7 Office and First Aid Rooms: Each physical education and/or athletic area should be provided with an office for both men and women instructors. Each office should be large enough to accommodate the necessary office furniture and equipment.

4-6.(10)71 Each first aid room should be large enough to provide for rubbing tables, first aid storage cabinet, and other training equipment. Direct access from the first aid room to both the office and dressing room should be possible.

4-6.(10)8 Athletic Facilities: A minimum clear floor of fifty (50) feet by eighty-four (84) feet with six (6) feet of clearance on each side and end shall be provided in all gymnasiums.

4-6.(10)81 A minimum of eighteen (18) feet clear ceiling height shall be provided. No obstructions including lights shall be lower than eighteen (18) feet over the playing floor.

4-6.(10)82 The gymnasium floor should be hard rock maple flooring with a thickness of 33/32" laid over sleepers or joists. Where sleepers are used, adequate sub-floor ventilation shall be provided.

4-6.(10)83 Sub-floors or sleepers over concrete on grade shall be treated to prevent damage from moisture, insects, and/or dry rot.

4-6.(10)84 Care shall be taken that the wood floor has allowance for expansion and contraction at all walls.

4-6.(10)85 The floor finish shall be non-slip. The floor should first be treated with a clear penetrating seal and buffed smooth before another coat of seal is applied. Lines for all games should be painted before the finish coat of clear seal is applied.

4-6.(10)86 Gymnasium Windows: All windows in the gymnasium where there is danger of breakage shall be protected by metal guards.

4-6.(10)861 The use of wire glass is recommended in all gymnasium windows.

4-6.(10)862 Any windows located in dressing rooms or shower rooms shall be located at least five (5) feet six (6) inches above the floor and shall be of obscure wire glass.

4-6.(10)87 Gymnasium Walls: Walls in all parts of the gymnasium should be smooth surfaced for a height of at least six (6) feet.

4-6.(10)871 When the gymnasium or play room is also used as an auditorium, it shall be acoustically treated.

4-6.(10)88 Seating: Rollaway, telescoping, or fold-up bleachers are recommended for use in gymnasiums to allow more floor space during periods of non-spectator use.

4-6.(10)881 Bleacher sections shall contain not more than twenty (20) rows of seats. Spacing of seats back to back shall be not less than twenty-two (22) inches.

4-6.(10)882 Bleacher sections shall be provided with aisles not less than three (3) feet six (6) inches in width with no more than nine (9) seats between any seat and an aisle.

4-6.(10)883 **EXCEPTION:** Bleachers with less than twelve (12) rows of seats need not be provided with aisles if the vertical distance between seats does not exceed twelve (12) inches.

4-6.(10)884 Where bleacher sections are placed on platforms above the main floor, a cross aisle and guard railing shall be provided at the front of such sections. Open end sections shall be provided with railings above the fourth row of seats. Where the back row of seats is not against a wall, a railing shall be provided at the back of the section.

4-6.(10)89 Provision for a timer's and scorer's table must be considered. Such table should be arranged for the convenience of the players without interference of the spectators.

4-6.(10)891 Facilities for broadcasting equipment and personnel should be included in the planning of all sports areas.

4-6.(10)9 Out-of-Door Facilities: The out-of-door facilities for physical education, recreation and athletic programs should be planned with consideration given to the following:

1. Meeting the needs and interest of all students for the entire school year.

2. Providing recreational areas for student use during non-school months.

3. Providing recreational facilities for community use.

4. Providing a large enough area to meet present and future enrollments.

5. Locating areas where they are easily accessible and where children do not have to cross roads to get to them.

6. Locating play areas where noise does not interfere with other phases of the educational program.

7. Providing ample parking space and seating for spectators.

4-6.(10)91 Recreational, physical education play areas and inter-scholastic programs require econsiderable space to meet present-day programs.

4-6.(10)92 Provisions should be made for hard surfaced play areas including tennis courts, out-of-door basketball courts, volley ball courts and other such play areas calling for special surfacing. Not less than one-half acre of such type area should be provided for each two hundred (200) pupils. Football fields, track and field areas, baseball diamonds, spectator space, tennis courts and field game areas will, if all are provided, require ten and one-half acres (10.5) acres of property.

4-6.(10)93 Persons responsible for the selection and development of school sites should consult the latest rule books on various sports for playing areas that are to be included in the total school facility.

4-6.(10)94 The following sports area dimensions are listed for guide purposes only. Some areas may be used for more than one activity.

AREA	DIMENSION	SPACE REQUIRED IN SQUARE FEET
Football (and other large game activities)	160' x 360'	57,600
Track and field (quarter mile track, 220 yard straightway)	260' x 700'	182,000
Hard surface area	100' x 120'	12,000
Basketball (out-of-doors)	50' x 84'	4,200
Field game areas	200' x 400'	80,000
Baseball	310' x 310'	96,100
Softball	275' x 275'	75,525
Apparatus	25' x 100'	2,500
Tennis (Court Area Only - Need large surfaced area especially on ends.)	36' x 78'	2,808
Volleyball	30' x 60'	1,800
Horseshoes	10' x 50'	500
Archery	50' x 175'	8,750
Miscellaneous activity area	100' x 200'	20,000
Spectator area (minimum)		15,000

NOTE: The above dimensions are actual playing areas and do not allow for extra space at the ends or on the sides of the court. Such space is necessary in most instances.

4-6.(11) School Lunch Facilities

4-6.(11)01 The National School Lunch Program is designed to improve the health of the nation's school children. Proper planning will make it possible to provide facilities and equipment to meet this objective.

4-6.(11)02 Available finances, size of school, community demands, and general practice have all put demands on the School Lunch Program which make it necessary for these facilities to have dual or multipurposes. Therefore, any planning must recognize the many facets connected with the entire program.

4-6.(11)11 Location: Accessibility for delivery of commodities must be considered. Such service areas should be so located that driveways will not interfere with playgrounds or pupil traffic to and from the lunchroom.

4-6.(11)12 Use of the lunchroom outside of school hours should be possible without the entire building being open.

4-6.(11)13 Entrances should be located where waiting lines will not disturb classes which may be in session.

4-6.(11)21 Storage Areas: An outside loading dock or platform for deliveries to the kitchen and storage areas should be provided. This dock should be covered, have the same floor level as the storage room, and a minimum area of sixty square feet.

4-6.(11)22 Separate doors leading from the platform to the kitchen and storage areas should be provided. It is recommended that these doors be at least forty-two (42) inches wide.

4-6.(11)31 Dry Storage: The purpose of the dry storage area is to provide security, orderly arrangement, proper ventilation and temperature control of foods not requiring refrigeration. An area of not less than one-half (½) square foot of floor space for each lunch served should be provided to permit quantity buying in addition to those foods supplied by the U. S. Department of Agriculture.

4-6.(11)32 Dry storage construction shall meet all State Board of Health and local regulations and shall not be located under sewer pipes or waste lines.

4-6.(11)33 Ventilation shall be provided allowing a minimum of four (4) changes of air per hour. This may be by forced air, operable louvres, or windows, maintaing a temperature between 40° and 65° F. A thermometer should be available for checking this range in temperature.

4-6.(11)34 More usable storage is possible through the use of pallets for stacking case and bag goods with shelving used only for small cases such as spices. Pallets should be at least six (6) inches high and built to make cleaning and sweeping under them possible. They should be placed at least six (6) inches from the walls and with alley ways wide enough for easy access for stacking or unstacking. (See School Lunch Manual for more details.)

4.6(11)41 Refrigerated Storage: The size of the school lunch program, the buying practices of the administration and the local delivery situation will determine the minimum refrigerated storage needs of each program. These factors will also determine which type of refrigerator is required. It is recommended that facilities include both general refrigeration and frozen food storage.

4.6(11)42 Any walk-in type refrigerator shall be equipped with a door with lock which can be opened from the inside without the use of a key.

4.6(11)43 Storage shelves should be slotted to provide adequate air circulation and should be removable for easier cleaning.

4.6(11)51 Garbage Storage: Facilities for storing garbage and other waste material shall be provided and shall meet all State and/or local requirements as to size and construction.

4.6(11)52 A separate storage room with an outside entrance is recommended. This room should be fly-proof and equipped with hot and cold water and a floor drain for proper washing of garbage cans.

4.6(11)61 Janitorial Storage: Under no conditions should soaps, detergents, cleaning and janitorial supplies be stored in a food storage room. A separate closet in or adjacent to the school lunch area should be provided.

4.6(11)71 Kitchen: Rectangular kitchens usually allow for more efficient operation and use of space. The length should not be more than twice the width. An area allowing one and one-half (1½) to two (2) square feet of space for each lunch served should be provided.

4.6(11)72 Planning must include the different functions and their locations in the kitchen. These functions include hot food, baking, cold food (including raw vegetables and salads), serving, dishwashing, and storage. Proper arrangement of areas for these functions will meet the needs of the program.

4.6(11)73 A ventilated hood shall be provided over all ranges and ovens. These hoods should have power exhaust fans and removable filters.

4.6(11)74 A separate handwashing basin, soap, and towel dispenser shall be installed convenient to the food preparation area.

4.6(11)75 A two-compartment pot sink should be provided in each food preparation area.

4.6(11)81 Serving Counters: Each serving counter shall be equipped with a sneeze bar. (See School Lunch Manual)

4.6(11)82 The length will vary from sixteen (16) to twenty-five (25) feet depending on number of meals served during any one lunch period.

4.6(11)83 The width varies from twenty-seven (27) to thirty (30) inches determined by type of trays, etc., used.

4.6(11)84 The height should not exceed thirty-two (32) inches for elementary schools, nor thirty-six (36) inches for secondary schools with thirty-two (32) inch height recommended for combination groups.

4.6(11)85 Serving counters should be located to provide full utilization by students and school lunch personnel. Serving aisles for workers should be no less than thirty-six (36) inches wide.

4.6(11)91 Dishwashing: Must not interfere with meal preparation or serving of food.

4.6(11)92 Soiled dishes and unused portions of food shall never be returned to the food preparation area.

4.6(11)93 Windows for return of soiled dishes six (6) feet long and nine (9) inches high are recommended. The sill should be the same height as the serving counter.

4.6(11)94 Sinks with a minimum of three (3) compartments shall be installed in all kitchens unless a mechanical dishwasher is provided. A pre-flush sink shall be provided for both manual and mechanical dishwashing. The State Board of Health should be consulted concerning acceptable types of dishwashing machines. A minimum of fifteen (15) feet of counter for soiled and clean dishes is recommended. Additional lengths at the rate of one (1) foot per one hundred (100) meals served may be desirable.

4.6(11)95 Water temperatures for washing dishes shall be maintained at 140° F for machine washing, 120° F for manual washing and 180° for rinsing.

4.6(11)(10) Dining Room: The dining room should be entirely separate from the kitchen area and large enough to accommodate anticipated participants. A minimum of ten (10) square feet per pupil should be provided. More space will be necessary when dining rooms are used for purposes other than school lunch.

4.6(11)(11)1 Equipment: Care must be taken to be certain that the purposes of the dining room can be met with the type of furniture and equipment installed.

4.6(11)(11)2 Tables, chairs or benches should be finished with a hard surface that is easily cleaned and should be easy to move and store.

4.6(11)(11)3 Aisles between seating should be no less than thirty (30) inches wide.

4.6(11)(11)4 Book and cloak storage may be required.

4.6(11)(11)5 Adequate facilities should be provided for those who bring their own lunches.

4.6(11)(11)6 Chalkboard and ten (10) foot of tackboard should be provided with picture display.

4.6(11)(11)7 Drinking fountains shall be provided in the dining area if drinking water is not provided in the serving area.

4.6(11)(12)1 Office: Office facilities of some type should be provided for each school lunch program.

4.6(11)(13)1 Toilet and Closet Facilities: Every school lunch area shall be provided with adequate and conveniently located toilet and lavatory facilities. Toilet rooms shall not open directly into any room in which food, drink or utensils are handled or stored and shall have self-closing doors.

4.6(11)(13)2 Closet space for hanging employees coats and storage of purses and other personal belongings should be provided.

ELEMENTARY SCHOOL PLANNING

5-1.1 Classrooms for elementary children should be planned following a careful analysis of the type of educational program to be offered. At present most Idaho schools do not offer kindergarten programs.

5-1.2 The program for the first three grades includes a variety of activities. Areas for display, nature study, small group activity, library space, basic science experiments, handwashing facilities, worktables, sinks with hot and cold water should be provided. Easily accessible storage space which is large enough to provide for the wide variety of activities is necessary. Storage space for hats, coats and overshoes should be provided. Consideration should be given to the inclusion of toilet facilities, especially in the first grade. When possible, direct access to the outdoors is advisable for the primary grades.

5-1.3 The upper elementary grade classrooms must provide for opportunities for children to engage in large group activities. There must also be opportunity to provide for small group and individual activity. Chalkboard and tackboard space should be adequate. Work areas for science and social science projects should be available. Storage space for materials and supplies should be adequate to meet all needs. Library space for storage and display of books and magazines is desirable. Storage space and work areas for activities which develop physical skills and provide for activity in the use of simple tools and for participating in varied arts and crafts is advisable.

5-2.0 Classrooms

5-2.1 When planning elementary buildings an adequate number of classrooms of the proper size with equipment designed to meet each age group's needs should be provided. In order to provide for the variable types of grade organization, several possible plans are presented. These divisions are projected on the basis of the present over-all enrollments in Idaho schools.

5-2.2 To determine classroom needs in your district, establish the percentage of enrollment each grade bears to the total enrollment. This will provide a growth-need picture. Dividing the enrollment in each grade by thirty will give the minimum number of classrooms needed for any grade level.

5-2.3 Local conditions often dictate future growths. Areas where school population has been quite stable for many years will probably not find it advisable to anticipate large increases in enrollment. Areas where a steady growth is reflected in the school population should take such growth into consideration.

5-3.0 Location

5-3.1 It is recommended that primary grade rooms through grade 3 be located on the ground or first floor. They should be located convenient to playground, lunchroom and toilet rooms.

5-3.2 Upper elementary grade rooms should be located convenient to the lunchroom, lavatories and playgrounds.

5-4.0 Size

5-4.1 Classrooms in elementary buildings shall provide a minimum of not less than eight hundred fifty (850) square feet of usable floor space exclusive of storage, work counters, cloakrooms, sinks, etc.

5-4.2 In unusual circumstances districts may apply to the State Board of Education for permission to construct smaller classrooms. Such permission may be granted by the State Board of Education where circumstances warrant. It is recommended that no elementary classroom be constructed which provides less than thirty (30) square feet per child in anticipated enrollment.

5-5.0 Plumbing and Toilets

See Section on Sanitary Facilities.

5-6.0 Equipment

5-6.1 Teacher's Closet: A closet with door and lock for each room for teaching materials and coats should be provided. Closets should be large enough to provide adequate space for materials. A set of files and shelves for records, pupil work materials, and supplies should be provided for each classroom. Too often this is omitted and the teacher finds that she has no adequate place for storing such things.

5-6.2 Shelving: Bookshelves should be provided for each room. The shelving should be adjustable. Twenty (20) lineal feet of bookshelves is recommended for grades one, two and three. A minimum of fourteen (14) feet is suggested for grades four through eight.

5-6.3 Wardrobes and Lockers: Adequate wardrobe or locker space shall be provided for all students. These facilities may be located within or adjacent to the classrooms. The wardrobe should contain low open front lockers with a top. A shelf with a hook strip underneath should be included. The height of the hook strip should vary with the grade. It is suggested that wardrobes be provided with a boot storage shelf for each child.

5-6.4 Chalkboards: Not less than sixteen (16) lineal feet for grades one and two, and twenty (20) lineal feet for grades three through six shall be provided. Additional chalkboard should be provided, particularly in the upper grades. It is recommended that chalkrails not exceed twenty-six (26) inches in height for grades one through three and thirty (30) inches for grades four through six.

5-6.5 Tackboards: Adequate provision for tackboard should be made for each classroom.

5-6.6 Work Areas: A minimum of six (6) feet of work counter space complete with a sink should be provided in each classroom twenty-six (26) inches high for grades one through three, thirty (30) inches high for four through six. Storage cabinets with doors and adjustable shelves should be provided underneath the work counters. Sizes of the doors should vary to allow for easy access to, and storage of, varying sizes of paper. In the lower grades it is desirable to install from four to six (4 to 6) feet of shelving at an angle for the display of pamphlets, books and other material.

5-6.7 Acoustics: All rooms except toilets, kitchen, utility, mechanical and storage rooms should have acoustical treatment.

5-6.8 Suggestions: Consideration should be given to the following:

5-6.81 Library corner.

5-6.82 A science center with aquarium and terrarium.

5-6.83 An art center with easels, clay area and finger painting tables.

5-6.84 A history and geography display and storage area.

5-6.85 A news center with bulletin board for daily recording of interesting events.

5-7.0 Other Facilities

5-7.1 Multipurpose Rooms: A full utilization of school building space and the necessity for economizing on expenditure has resulted in the construction of many multipurpose rooms, particularly in the elementary school. Such construction offers many advantages.

5-7.11 The minimum recommended size for such rooms is forty (40) by sixty (60) feet. These rooms may serve as physical education activity rooms, provide a sheltered area for play purposes during bad weather and serve as general assembly rooms or auditoriums. They may be used as lunchrooms, music rooms or as a meeting place for community groups.

5-7.12 Care must be used in planning such rooms. Ample exits to the out-of-doors should be provided. Storage space for physical education equipment, chairs, etc., should be provided. These rooms may be equipped with stages and other facilities for presentation of plays and community activity.

5-7.13 Installations of any type attached to the wall should be recessed as a precaution against injury. If the planned multipurpose room is also to be used as a lunchroom, reference should be made to the section on school lunch facilities when planning construction.

5-7.2 Administrative Suites: Any elementary building designed for an enrollment of 180 or more students or a total of six or more classrooms shall have an office and a health room. Provision for fire-safe storage shall be made in all offices. A vault, safe or fire-safe file will meet this requirement for the storage of permanent records.

5-7.21 Office suites should provide ample space for student and parent visitation, for counseling and guidance work, as well as space for intercommunication systems. More than one entrance should be provided for each office area.

5-7.22 The health room should provide an area where persons who become ill can be isolated. Office space for the school nurse and adequate storage space for records and first aid supplies should be provided.

5-7.23 The health room shall be equipped with hot and cold running water, a medical cabinet capable of being locked, lavatory and toilet facilities.

5-7.3 The School Library: Where a library is provided in an elementary school, it should be planned in such a manner as to provide ample opportunity for use by each elementary age group. Display cases, tackboard space, and magazine and newspaper racks should be provided. Shelving should be so located as to provide areas of interest for each age group.

5-7.31 The library should be so located as to provide easy access for students. This is particularly true for the upper grades. Libraries should be large enough to accommodate from one-sixth to one-fifth of the total school enrollment at any given time. Ample storage space and catalog file cabinets should be provided.

5-7.4 Special Rooms: There are several other types of rooms which are desirable for a total school program. Among these are art rooms, manual art rooms, lunchrooms, kitchens, auditoriums, teachers' rooms and special classrooms. These facilities are included with the secondary schools in this manual.

ELECTRICAL INSTALLATIONS

6-1.0 General

Electrical installations are becoming more complex and increasingly important in the teaching and administrative functions of school buildings. As such, careful attention to their design is required. Inadequate electrical facilities will inhibit flexible use of the school plant when changes in instructional methods and apparatus become desirable.

6-2.0 Codes

All installations of wire and equipment to convey electric current and installation of apparatus to be operated by such current shall be in accord with the Idaho State Electrical Code, as amended, provided that such requirements as the above shall not apply to incorporated cities and villages which by ordinance or building code prescribe the manner in which wires or equipment to convey electrical current and appartus to be operated by such shall be installed. (54-1001 Idaho Code, as amended.)

6-3.0 Wiring Methods

6-3.1 All wiring shall be installed in accord with the National Electrical Code, the State of Idaho Electrical Code, local ordinances or regulations or this manual, whichever has the highest requirements.

6-3.2 Feeders shall be run in rigid metal raceways; except that raceways run underground or under concrete floor slabs may be non-metallic, concrete encased.

6-3.3 Branch circuits, both A.C. and D.C. shall be run in rigid metallic raceways.

6-3.4 Low voltage control wiring shall be installed in accord with Article 725 of the National Electrical Code.

6-4.0 Service Entrances

Service entrance conductors shall be installed to insure safety to the pupils. Services shall be underground from the school grounds property line where practical.

6-5.0 Panels

6-5.1 Main service panels with main disconnects and main light and power panels shall be located so as to prevent access by unauthorized persons. Provision shall be made to prevent the accumulation of storage and trash in such areas.

6-5.2 A reasonable number of spare circuits should be provided in panels for future use.

6-5.3 All branch panels located in corridors, halls or other places where they are accessible to students shall be of a flush type and shall be provided with locks.

6-5.4 All panels shall be the dead front type. Branch panels for lighting and convenience outlets should be of the automatic circuit breaker type. Main, distribution and power panels may be either the switch and fuse or circuit breaker type.

6-6.0 Artificial Lighting

6-6.1 Levels of illumination shall conform to the current edition of the Illuminating Engineering Society Lighting Handbook for the various areas and visual tasks therein. Where multiple use is made of rooms the illumination level shall be designed for the most difficult seeing task. All lighting design shall include lamp and fixture depreciation factors.

6-6.2 Fixture design and placement shall provide the minimum practical brightness and glare. Fixtures used in classrooms, libraries, drafting rooms, sewing rooms, etc. should conform to the Illuminating Engineering Society "Scissors Curve."

6-6.3 Fixtures should be selected to provide ease of relamping and cleaning.

6-6.4 Switches shall be provided at the entrance to all spaces in the building. Such switches shall be placed in the most convenient location, preferably on the knob side of the door entrance.

6-6.5 Stairway and corridor lighting shall be on separate circuits and shall be independent of other circuits. Multiple purpose switches shall be provided at or near the end of corridors and at the head and foot of each stairs.

6-6.6 Switching in instructional rooms should be so arranged that lights adjacent to the interior wall may be controlled independently of those adjacent to the outer wall.

6-6.7 Some of the lighting in cafeterias, lunchrooms, gymnasiums, auditoriums and playrooms shall be provided and controlled by a switch located on the knob side of the entrance doors.

6-6.8 Switches should be provided in projection booths and on stages to control some (or all) lights in rooms in which projection booths are installed.

6-7.0 Convenience Outlets (Receptacles)

6-7.1 Every instructional classroom shall be provided with a minimum of two duplex receptacles. It is recommended that one be located at the front and one at the back of the room. Where there is a work counter on the side of the room a third duplex receptacle should be mounted in the wall above the counter.

6-7.2 All auditoriums, gymnasiums, multipurpose rooms or other areas used for general assembly purposes should be wired for the use of audiovisual equipment. Built-in speaker cables from the projector location to the stage should be provided.

6-7.3 Science laboratories, distributive education areas, homemaking departments, business education departments, shops and other instructional areas where a considerable amount of electrical equipment is to be used shall be provided with outlets of the proper type and number to meet the needs of each area.

6-7.4 A minimum of two duplex receptacles for each table section is recommended for physics, chemistry and biology laboratories.

6-7.5 In instances where science rooms are equipped with a teacher demonstration table, such table shall be provided with a minimum of one duplex outlet. It is suggested that two be provided.

6-7.6 Office suites and teachers' workrooms should be supplied with adequate electrical outlets, at least one on each wall.

6-7.7 Receptacles shall be properly located throughout the building for cleaning equipment and other similar uses. Such electrical receptacles should not be located in janitors' supply closets.

6-7.8 All receptacles shall be the grounding type, suitable for both ground contact and non-grounding plugs.

6-8.0 Exit Signs and Exit Illumination

6-8.1 All areas used for general assembly purposes, such as gymnasiums, auditoriums, school lunchrooms and multipurpose rooms, shall be provided with electrically illuminated exit signs over or adjacent to all exit doors.

6-8.2 Electrically illuminated exit lights shall be provided at the head and foot of all exit stairways, over exit doors which lead from the building and other locations where necessary to indicate direction of egress.

6-8.3 The word "EXIT" shall not be less than 4" high for all exit signs. Exit lights should be mounted above doors or on the wall adjacent thereto. Letters shall be green.

6-8.4 Exit lighting circuits shall be on a separate circuit ahead of the main entrance service disconnect.

6-8.5 An intensity of not less than five foot candles of light shall be provided in all exitways where passageways, stairways, corridors or stair landings are part of the exit way.

6-9.0 Fire Alarm System

6-9.1 Every building shall be provided with a fire evacuation system. Signals shall be so located as to provide positive warning to all parts of the school building(s). Fire alarms shall be provided in corridors and in all areas, such as boiler rooms, science laboratories and kitchens where fire hazards are greater than normal.

6-9.2 The systems shall be closed-circuit, supervised, NEMA Type 1. All wiring except low voltage detector circuits shall be in metallic raceways. All components shall be approved by the Underwriters Laboratories.

6-9.3 Automatic detectors should be provided in unattended areas such as storerooms, boiler rooms, large attics, etc.

6-9.4 Alarm stations and sounding devices shall be painted red. Sounding devices shall produce a sound distinctly different from any other signaling system in the building(s).

6-9.5 Program bells, buzzers, intercommunication and radio systems, etc. shall be independent of fire alarm systems.

6-10.0 Program Clock System

It is recommended that all new schools of six or more classrooms be wired for a signal system operated by master clock and/or by push buttons from the principal's office. Automatically controlled clocks are recommended for schools of twelve or more classrooms.

6-11.0 Public Address System

Outlets and raceways should be provided for public address and/or intercommunicating systems. In schools of twelve or more classrooms provision should be made for private communication between classrooms, shops, library, homemaking rooms, etc. to the administrative office. The completed system should provide for selective paging of each loudspeaker. The main amplifier console should provide radio, records, tape, local and remote microphone facilities.

6-12.0 Television

Outlets and raceways should be provided in all instructional areas for television antenna and/or closed-circuit systems. A convenience outlet should be located adjacent to each television outlet.

6-13.0 Electric Space Heating

Electric space heating is economical for many school buildings. Its use usually requires additional building insulation and other means to reduce the heat losses to the lowest practical amount. Many grades (qualities) of heating equipment are on the market. For reasons of safety and maintenance only commercial grades of heating equipment shall be used. Safety overheat cutouts shall be installed in all heating devices to prevent injury to persons or to prevent fires from being started. Time clock control of heating systems may be desirable.

6-14.0 Drawings and Specification Submittal

The working drawings and specifications previously noted to be submitted to the State Board of Education shall be complete in all details. All apparatus shall be located and specified. All raceways and conductors shall be indicated on the drawings together with sizes and quantity. All circuits in each main, distribution and branch panel shall be identified and listed on the panel schedules. Drawings showing outlets only without raceways and conductors are not acceptable.

6-15.0 Statement of Adequacy

The plans for heating and electrical systems for any public school building in the State of Idaho shall be prepared by a practicing architect or engineer licensed to practice in the State of Idaho. At the time final drawings are submitted to the State Board of Education or its agents for approval, they shall be accompanied by a "Statement of Adequacy" signed by the architect and/or engineer.

The form of the statement shall be as follows:

The electrical system for (Name of School) of school district number ________ of ______________________ County has been designed by the undersigned. We (or I) are (or am) familiar with the applicable codes, specifications and requirements for electrical system and their installation in school buildings in the State of Idaho. We (or I) assume responsibility for the proper design of the electrical system for the (Name of School) of school district number ________ of ______________________ County and further declare that the design of the electrical system meets the requirements of all codes, specifications and regulations applicable to school buildings in the State of Idaho.

______________________ ______________________

Date Signature of Architect

____

Signature of Engineer

HEATING, VENTILATING AND AIR CONDITIONING

7-1.0 IMPORTANCE OF THERMAL ENVIRONMENT

Studies have shown that the quality of the thermal environment in the classroom ... that condition of the air and surrounding surfaces which affects the physical and mental comfort of the student can affect the ability of the student to grasp instruction. Studies show that both working and learning efficiency decrease with departure from the optimum. If the student is too cold, he will be distracted; and, if he is too warm, he will be sleepy and inattentive. An uncomfortable thermal environment may be fatiguing and distracting to the student; therefore, the maintenance of the proper thermal environment is an important factor in the most productive use of teaching time.

7-2.0 REQUIREMENTS FOR HEATING AND VENTILATING

7-2.1 The minimum functions of a heating and ventilating system employed to maintain the proper thermal environment in a school building shall be:

7-2.11 The supplying of heat from warm-up and to balance heat losses from the room to the outside.

7-2.12 The supplying of tempered outside air for the removal of excess heat.

7-2.13 The dilution and removal of unpleasant body odors by ventilation.

7-2.14 The removal of injurious or obnoxious gases, vapors, fumes, and dust by the introduction of outside air or by filtration.

7-2.2 Heating plants and ventilating systems should be of sufficient capacity to meet the requirements within the building during the period of occupancy, under extremes in local weather conditions, without sustained operation beyond the rated capacity of the system:

7-2.21 Operative temperature. Heating systems of conventional design should provide the following temperatures: (a) classrooms, auditoriums, offices, cafeterias, 70 degrees F. measured 30 inches above the floor; (b) closed corridors, stairways, shops, laboratories, and kitchens, 68 degrees F. measured 60 inches above the floor; (c) activity rooms such as gymnasiums, 65 degrees F. measured 60 inches above the floor; and (d) special cases, 65 degrees F. for toilet rooms, 78 degrees F. for locker and shower rooms, and 83 degrees F. for swimming pools measured at 60 inches above the floor. The maximum temperature gradient from floor to 60 inches above the floor should not exceed 3 degrees.

7-2.22 Air Supply. Ventilating systems shall have capacities to provide, and heating systems should allow for, the introduction of fresh outdoor air as follows: (a) for removal of body odors in area where no special odor sources exist, as in classrooms and libraries, a minimum of 10 CFM per person. Should the building require cooling, this load should be determined separately, and the total air circulating capacities selected on the basis of the cooling requirement, which will usually require air capacities larger than those indicated above; (b) six air changes per hour, not necessarily all outside air, wherever unusual odors are likely to occur, such as in toilet and locker rooms, chemical and food laboratories, and kitchens. Toilet room ventilating systems shall be entirely independent of those serving the rest of the building. When odors, obnoxious fumes, and dust arise from localized sources, they should be removed by special vents at those sources.

7-2.23 Air Movement. Air movement in occupied areas generally should not exceed (a) during the heating season, 26 lineal feet per minute, and (b) during mild weather (for cooling) 100 lineal feet per minute. The flow of air should provide uniform circulation of heat in the winter season and increased velocity for cooling in milder weather. Variations will depend on local climatic conditions. In some cases, special provisions will have to be made in the window zone to overcome the effects of cold window downdraft in order to keep air velocities within this limitation.

7-2.24 Humidity Control. When desired, humidification can be provided. Humidity in classrooms in winter weather is limited, however, by surface temperatures of the windows and walls. If the humidity is such that the dew point is above the surface temperature, condensation on windows or walls results. Unless special provision has been made in the building design, such as the use of dual glazing and vapor barriers in the outside wall, it is generally impractical to maintain relative humidities in classrooms in cold weather much above those levels which occur naturally. Relative humidity, moreover, plays a minor role in thermal comfort at customary indoor winter air temperature, since a small change in air temperature is equivalent to a major change in relative humidity. If air conditioning (cooling) is installed for summer comfort, the problem is one of dehumidification.

7-2.25 Air Cleaning. Air cleaning may be essential in areas where the air is heavily ladened with dust or smoke. Washing, screening, precipitation, absorption, or other cleaning methods may be used.

7-2.26 Radiant Temperature. Reduced radiant temperatures are usually compensated for by increased air temperatures. In some cases, however, special treatment of the window zone may be desirable to compensate for the greatly reduced radiant temperature there as compared with the rest of the room.

7-3.0 HEATING AND VENTILATING SCHOOLS

7-3.1 Heating systems range in type from individual room units to automatic systems which maintain positive temperature control at all times. Ventilating systems vary from the open window to mechanical systems which maintain complete control of all air movement.

7-3.2 The type of heating and ventilating system to be installed may depend upon: Original cost, operating cost, the maintenance services available, the size of the building or plant, and the level of student comfort which can economically be obtained. Each system has some advantages and disadvantages for particular installations and operations. The common media for the transfer of heat from the point of generation to the point of use are hot water, steam, air, and electricity.

7-3.3 Heat may be dispensed by units located directly in the room, such as radiators, convectors, or unit ventilators which are direct - indirect; by units wholly outside the room, such as heaters or furnaces with the air piped in, indirect; or by the use of the walls, floors, or ceilings, called panel or radiant heating. Systems which combine both direct and indirect heaters are known as split systems.

7-3.4 Ventilating systems may be classed as gravity or mechnical exhaust, and mechanical supply. The method chosen is dependent on the desire for improved control, on climate and weather conditions which prevail, and on cost.

7-3.5 In general, controlled mechanical supply ventilation will result in more satisfactory classroom conditions. Open windows without definite provision for exhaust are of little value in obtaining air motion and are not recommended. Exhaust vents should be located near the corridor wall or in lockers or wardrobes. Gravity exhaust systems should be activated by roof ventilators, or similar aspirating devices located at the top of the vent stacks above the roof, and should be equipped with backdraft dampers to prevent cold air from falling back down the stack into the classroom. Mechanical systems employ one or more fans to insure flow of the air out the exhaust system, usually from a plenum to which the classroom exhaust stacks are connected. Where mechanical exhaust is employed, provision should be made to prevent the entrance of cold air into the building when the supply fan is not running.

7-3.6 Various areas in the school create special ventilating problems. Auditoriums and other spaces where large numbers of people assemble shall have ample ventilation. Mechanical supply ventilation, with six to eight air changes per hour, is usually essential. As many as twelve to fifteen air changes per hour may be desirable in auditoriums or other places used for assembly in summer if air conditioning is not provided.

7-3.7 *Toilet rooms, foods laboratories, kitchens, and other spaces generating odors shall have positive, separate exhaust ventilating facilities.* Fume hoods in laboratories should have noncorrosive ducts with automatic fume-hood-door controlled fans to provide positive exhaust control. Drying rooms should also have segregated mechanical ventilation. Care should be taken that the exhaust provisions do not exceed the mechanical supply volume.

7-3.8 Some of the types of heating and ventilating systems most commonly used are:

7-3.81 *Direct radiation.* Heat is provided by radiators or convectors located in the room under the windows and along the window wall. Ventilation should be supplied by gravity or mechanical means.

7-3.82 *Panel heating.* This system produces a radiant temperature and warms the room by means of a floor, ceiling, or wall which is heated above room temperature by imbedded hot water piping, warm air ducts, or electric heaters. Ventilation should be supplied by mechanical means. A supplementary source of heat - such as tempered air blown into the space-usually is necessary in panel heating systems to offset the otherwise excessive cooling effect of ventilation. In some regions the inability of such systems to respond quickly to sudden or wide changes in demand make panels alone undesirable for school classroom use, although floor panels used in conjunction with other systems are desirable for keeping floors comfortable in kindergartens and lower elementary classrooms, where children sit on the floor.

7-3.83 *Unit ventilators.* Unit ventilators (which are not to be confused with unit heaters) are fan units, equipped with a heating element, outside air and recirculated air dampers, and fresh air intake. Located in each classroom, they are usually arranged to vary the amount of outside air, recirculated air, and heat circulated to supply ventilation and heating or cooling in accordance with the demands of the classroom. These units may be supplemented by other forms of radiation and/or devices designed to offset the chilling effects of large glass areas.

7-3.84 *Warm air furnace systems.* Heat generated in a warm-air furnace is absorbed by air circulating around it and generally is forced by fans through ducts to the rooms. Ventilating air is heated and circulated in the same manner. The addition of zone or room controls makes it possible to use this system in buildings of considerable size, although it is more adaptable to smaller installations. Cooling is possible when cold air is introduced into the duct system.

7-3.85 *Central fan or blast system.* Air is driven over banks of hot water or steam-heated radiators or coils, and delivered to the rooms through ducts by a fan. Ventilating air is handled in the same manner. Systems equipped for cooling may be of two types: (1) a double duct system in which one duct carries warm air for heating and another carries tempered air for cooling. Dampers at each room mix air from both ducts in accordance with the room demand, or (2) a booster system, in which a

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single duct supplies tempered air for cooling. A booster heater in the duct at each classroom warms the air for that classroom if heating is required. Systems may be low-pressure or high -pressure.

7-3.86 Split systems. The split system combines the central fan system with radiation or panel heating in the classroom. Generally speaking, the heating source within the room will adequately heat the room, while the fan system will provide the ventilating air, cooling, and extra heat for warm-up.

7-3.87 Individual room units. The individual room unit may be either gas or electric fired and should provide all of the heating and ventilating functions required for proper classroom comfort.

7-3.91 Each of the mechanical supply systems (numbers 7-3.83, .84, .85, .86 and .87) can supply tempered outside air to the room regardless of the outside temperature. The amount of fresh air introduced may vary with weather conditions, local practices, and system design, but may be controlled. In most cases, these systems recirculate room air and/or building air during the morning warm-up period. Naturally, such systems will perform effectively only when the fans are in operation.

7-4.0 HEATING CONTROLS

7-4.1 Adequate temperature controls are essential. Manual regulation of heating and ventilating systems by student or teacher manipulation of windows or heat controls is not only distracting in itself, but usually results in the worst possible heating environment because no action is normally taken until the situation borders on the unbearable; and because the teacher, who usually controls the system, invariably prefers and maintains a temperature which is too warm for proper student learning.

7-4.2 Many types of automatic controls are available - their desirability, cost, and complexity depending upon the required results. Controls for heating and ventilating systems for schools may be: Individual room controls, which relate the output of the system in each room to the needs of that room; zone controls in which a group of several rooms, preferably with a common exposure, are controlled in accordance with the needs of a single thermostat located somewhere in the zone; day controls which are those controls concerned with the performance of the system during occupied day periods; night controls which maintain the building at a lower temperature during the shut-down periods; day-night controls which perform both functions and which permit the selective restoration of individual rooms to day control at night by pushing a button on the thermostat. Boiler, furnace, and burner controls permit automatic firing of the heating plant. Program clocks make it possible for the system to function continuously and automatically without immediate attention.

7-4.3 The type of heating control selected depends upon the type of heating system, the type of building, the extent of its use for community activities during nonschool hours, the climate, the desired results, the available funds, designer's preferences, and other factors.

7-4.4 Zone control of heating and ventilating systems has some merit if economy is of utmost importance; however, because of the widely varying solar, lighting, and occupancy loads associated with school classrooms, individual room controls are preferred and recommended.

7-4.5 Day controls are usually desirable for all installations. Night controls may be or may not be employed, depending on the severity of the climate (maintaining minimum building temperatures is generally thought to provide greater fuel economy than permitting buildings to remain unheated during shutdown periods in cold weather).

7-4.6 Day-night controls may be used when portions of the building are regularly occupied at night, and permit maintenance of day temperatures in selected areas without heating the entire building. Since prospective fuel savings and convenience must be weighed against higher original cost, a careful analysis of the future community requirements is required in order to properly assess the need for day-night controls in individual classrooms. Automatic control may be of the electric type, which usually employs low voltage electric wiring to transmit the control signals; or pneumatic, which employs compressed air in small pipe lines, or electronic devices.

7-5.0 INSTRUCTION IN OPERATING MECHANICAL PLANT

7-5.1 Before acceptance of the heating contractor's work, the operating personnel should receive a complete set of written instructions regarding the operation and maintenance of the mechanical equipment, and should also insist that a designated school employee be given direct instruction by one or more competent representatives of the contractor or equipment firms.

7-6.0 DESIGN STANDARDS

7-6.1 The engineering design of heating and ventilating systems shall be based upon the technical data and procedure as published in the latest edition of the "Guide", published by the American Society of Heating, Refrigeration and Airconditioning Engineers.

7-6.2 All steel fired and unfired pressure vessels shall be designed, fabricated, inspected and tested and stamped in accordance with the current ASME Code for fired and unfired pressure vessels for the design working pressures. Gas fired appliances shall be rated in accordance with the Code for Testing and Rating of Gas Fired Furnaces of the American Gas Association.

7-6.3 All fans used for heating and ventilation for power roof ventilators and for forced warm air systems shall be constructed of the physical proportions of commercial fans and rated in compliance with the requirements and the standard test code of the National Association of Fan Manufacturers. In any instance where an agency shall establish standards of design ratings which shall exceed those shown in any of the above publications, such standards shall take precedence.

7-6.4 Applicable design and standards codes are listed on page 9-10.

7-7.0 SAFETY

7-7.1 All steam boiler installations shall be provided with an operating pressure control which will regulate the operating pressure of the boiler. In addition to an operating control all steam boilers shall be equipped with a high pressure safety control set and so designed as to interrupt the electrical supply to the firing equipment should the pressure become excessive.

7-7.2 Automatically fired gas and oil installations shall be equipped with manually reset flame failure safety cutout devices.

7-7.3 Hot water and steam boilers and unfired pressure vessels shall be provided with pressure and/or temperature relief valves which meet ASME Code standards.

7-7.4 Steam and hot water boilers, which are automatically fired, shall be provided with low water cutoff which will stop the firing equipment any time the water level is below normal.

7-7.5 Gas fired appliances with an A.G.A. input exceeding 450,000 BTU/HR shall be equipped with a manual reset safety valve designed to interrupt the flow of gas in the event of high temperatures or pressure, low water or electrical outage.

7-7.6 All ducts shall be equipped with automatic fire dampers where it is necessary to maintain fire barriers.

7-8.0 BOILER EQUIPMENT AND ROOMS

7-8.1 All boiler equipment and rooms should be of sufficient size to provide for additions and alterations to the building. A removable wall panel, removable windows or large door should be provided in the outer wall of each boiler room and/or equipment. Such opening should be large enough to provide for the removal and replacement of any equipment used in the room.

7-8.2 In all instances where stoker fired boilers are used ample floor space shall be provided for the removal and disposal of ashes.

7-8.3 Adequate space shall be provided for servicing and cleaning equipment.

7-8.4 It is recommended that lifts for ash removal be provided in all boiler rooms where stoker fired boilers are in use.

7-8.5 Each boiler room shall be provided with a stationary louver in the outside wall or door with a free area of not less than 200 percent of the required area of the stack or as required by governing codes.

7-8.6 Exhaust fans shall not be used to ventilate boiler rooms.

7-8.7 All chimneys should be large enough to carry any future anticipated loads.

7-9.0 FUEL STORAGE

7-9.1 Fuel storage rooms for solid fuel shall be adjacent to, but separated from, the boiler room by a masonry fire resistive wall and a fire resistive door. One louver, not less than 20 square inches free area in size placed in an outside wall, shall be provided for each 100 square feet of floor space in all solid fuel storage rooms.

7-9.2 All liquid fuels shall be stored outside of the boiler room in accordance with Underwriters Approved Standards.

7-9.3 When gaseous fuels are used, the pipe main on the school property shall be large enough to accommodate anticipated additions to the building.

7-9.4 Gas installations, pipe fittings and outlets shall meet local and/or state established standards.

7-10.0 GAS HEATING

7-10.1 All gas transmission and distributing piping systems on public school grounds shall be constructed and installed in accordance with Section 8 of the American Standard Code for Pressure Piping, Serial Designation ASA B31. 1 1.8-1955.

7-10.2 Gas piping and appliances in all school buildings shall be constructed in accordance with NBFV Pamphlet No. 54. Installation of gas equipment in large boilers shall be done in accordance with the requirements of American Standard Serial Designation ASA Z21.33 - 1950.

7-10.3 In instances where such standards are amended or legislation is passed by the Idaho State Legislature, such legislation or amendments shall be held to be in full force and shall take precedence over existing requirements.

7-11.0 ELECTRIC HEATING

7-11.1 Electric heating equipment if installed shall provide all of the heating and ventilating requirements and functions heretofore set forth as minimum requirements and standards. All electrical work shall be in accordance with section 6 of this manual and all applicable codes.

SANITARY FACILITIES, WATER SUPPLY AND SEWAGE DISPOSAL

8-1.0 SANITARY FACILITIES

8-1.1 Complete, adequate, well-arranged, and properly maintained sanitary facilities are essential for the health, comfort, and convenience of school occupants. Since the formation of good health habits may be considered a desirable objective of education, schools should provide the appropriate physical facilities that put theory to practice.

8-2.0 WATER SUPPLY

8-2.1 An adequate source of water supply that is both safe and palatable shall be assured. An ample supply of water shall be available at all times for present and future expanded needs - at least 30 gallons per day per pupil for all purposes. The water must be safe for use as determined by state or local health authorities, and maintained safe by protection of source of supply, treatment if necessary, and periodic analysis.

8-3.0 TOILET ROOMS

8-3.1 Toilet facilities should be available for both sexes on each floor level. In multistory buildings more toilets generally should be installed on the first floor than on any of the other floors. Some economy may be achieved if toilet rooms are located adjacent to each other with a common utility space between for servicing; the same is true in multistory buildings if the toilets are located one above the other. Widely separated toilet rooms for boys and girls are no longer considered necessary; however, in instances where waiting in line might be expected, as in the case of rooms serving auditoriums and gymnasiums, it is desirable that the entrances to the two rooms be well separated. Entrances to toilet rooms should be designed to prevent visibility from the corridor. Lavatories should be placed so that pupils will pass them as they leave the toilet room. The toilet rooms should be of ample size. The provision of individual room toilets in connection with primary classrooms through Grade 3, with some schools having such individual room toilets through Grade 6, is becoming common practice. In some communities a single toilet may serve both sexes.

8-3.2 Toilets for public use should be conveniently available to the auditorium, gymnasium, and other parts of the school plant commonly used by the public. The pupils' general toilet rooms may be strategically located for public use also in some cases, particularly if such public use occurs largely during nonschool hours. Separation of adults and children during the day, however, is desirable. Where the size of the school warrants, separate toilet rooms should be provided for teachers and staff members and for service workers, particularly the school custodians and cafeteria-kitchen employees. A private toilet off or near the principal's office is desirable as a courtesy and convenience for special visitors and guests. Toilets to serve athletic fields should be located in the building if convenient; otherwise facilities

are recommended generally on the athletic field.

8-3.3 Floor drains and hose bibs should be provided in gang toilet rooms. Floor type urinals may not serve as floor drains.

8-3.4 Soap dispensers, waste containers, mirrors, book shelves, and hand drying facilities are essential. Warm water should be provided in all lavatories at all times. The temperature of the domestic hot water supply should be thermostatically controlled.

8-4.0 FIXTURES AND PLUMBING

8-4.1 The following ratio of sanitary fixtures shall be considered minimum in school buildings. Where school buildings have self-contained classrooms with toilet, lavatory, and drinking fountain facilities, the pupils in these rooms shall not be counted in computing the number of fixtures to be installed in general toilet rooms.

8-4.11 Water Closets. A minimum of two water closets shall be provided in each general toilet room. See Table A for exact fixture requirements.

Additional facilities, properly located with regard to rooms for community use, playground, cafeteria, staff personnel, and other special needs, should be provided in excess of those indicated above.

In lower primary grades the "baby" water closet bowl (10 inch rim height) may be provided; for upper grades and high school the standard size bowl (15 inch rim height), should be provided; and for adults the standard size bowl (15 inch rim height). Water closet bowls should be of vitreous china, should be of the extended lip or elongated type, and should be equipped with impervious open-front seats. Individual flush valves (provided with approved vacuum breakers) are recommended where there is sufficient water pressure.

8-4.12 Urinals. Urinals for boys' general toilet rooms shall be provided as set forth in Table A, but are not required in individual classroom toilet rooms. They may be either the wall hung or floor type. Urinals may be flushed by the manual operation of flushometers, or automatically flushed by means of a conventional siphon box arrangement. If the latter is used, a shut-off valve should be installed at a strategic location to cut off the continuous flow of water when school is not in session.

8-4.13 Lavatories. Lavatories or wash sinks shall be provided in toilet rooms as set forth in Table A. Sinks need not be equipped with a stopper if the pupils are expected to wash in running water. Tempered water preferably may be provided through one spigot rather than through two individual faucets. It is customary to install lavatories 25 inches above the floor for elementary grades, and 30 inches for high schools and adults. Some locations other than in toilet rooms where washing facilities are desired are: (1) workroom of administrative office suite, (2) nurse's office, (3) library workroom, (4) typewriting room and office machine practice room, (5) sewing room, (6) shops, (7) cafeteria kitchen, (8) dressing rooms off stage, and (9) open alcoves off corridors near cafeteria entrances. Circular or half circular gang washing fixtures and the trough type of wash sink may be appropriate in areas where a substantial number of persons wish to wash in a hurry, such as in shops and in the alcoves near the cafeteria entrances.

8-4.14 Drinking Fountains. Drinking fountains shall be provided in the ratio of 1-75 pupils, with a minimum of one fountain on each floor, and two in a school building. Fountains should be of impervious materials and of a type that will not permit the mouth of the pupil to come in contact with the nozzle, or permit water to fall back on the nozzle. The fountain jets and all openings in the water supply piping should issue above the level of the rim of the fountain bowl. Where reasonable construction permits, drinking fountains should be recessed to full length. Drinking fountains should not be located in toilet rooms. A fountain or bubbler in each elementary classroom is desirable. Drinking fountains also should be strategically located in the corridors, at least one of which should be readily available to persons attending functions held in the auditorium, gymnasium, or other common areas. Drinking fountains also are desirable in or near shops, in locker rooms off gymnasiums, in or near gymnasiums or playrooms, on or near the stage, in or near dining rooms, and in the cafeteria-kitchen. Drinking fountains should be individual fixtures and not attached to lavatories or sinks; however, if economy dictates such an arrangement in instructional rooms, only an angle stream fountain should be used.

The following heights for bubblers of drinking fountains are suggested:

Primary grades, 24 inches; upper elementary grades, 28 inches; junior high school, 32 inches and senior high school, 36 inches. Adults prefer a height of 40 inches.

8-4.15 Classroom Work Sinks. The installation of a stainless steel or enameled iron sink equipped with a stopper and a combination swivel faucet in each elementary classroom is becoming common practice. Both cold and tempered or hot water should be provided. A sink 18 inches by 24 inches is suggested as a minimum size, with a counter height of 24 inches for elementary classrooms. Work sinks may be installed instead of lavatories in office and library workrooms and in specialized instruction rooms. Special sinks are needed in instructional areas such as cooking rooms, art rooms, science rooms, and shops.

8-4.16 Service Sinks. A service sink with both hot and cold water should be provided in each custodian's closet. A combination swivel faucet designed to serve as a hose bib with vacuum breaker and high enough to permit the placement of a 14 quart pail in the sink without manipulation should be installed. The sink may be of enameled iron or stainless steel, or may be a masonry structure about 2 feet square built up from a sunken pit in the floor. The sink should be low for convenience, and a chip-proof rim is desirable.

8-4.17 Outside Hose Fixtures. Outside hose fixtures should be provided at least every 120 feet around the perimeter of the building. Frostproof hydrants elsewhere on the school grounds may be desirable. In some cases the installation of an underground sprinkling system for watering lawns may prove to be a good long-term investment.

8-4.2 The following Table A indicates minimum fixture requirements:

TABLE A

MINIMUM PER PUPIL FACILITY REQUIREMENTS

Water Closets

No. of Persons	Closets	
	Boys	Girls
Up to 25	2	2
26 to 70	2	3
71 to 105	3	4
105 to 155	4	6
156 to 205	5	7
206 or over	Add one water closet for each add'l 50 children or fraction thereof	

Urinals

No. of Boys	Urinals
Up to 25	1
26 to 60	2
61 to 90	3
91 to 120	4
121 to 150	5
151 to 180	6
180 or Over	Add one urinal for each add'l 40 boys or fraction thereof

....

Lavatories

No. of Persons	Lavatories
Up to 25	1
26 to 100	2
Over 100	Add one lavatory for each additional 50 children or fraction thereof

Drinking Fountain

A minimum of one for each 75 children or fraction thereof

....

8-5.0 PIPING

8-5.1 Drainage and venting shall be in accordance with state and local sanitation codes and with the best standard practice.

8-6.0 SEWAGE DISPOSAL

8-6.1 Plans for school sewage systems shall be based upon reasonable future requirements as well as present needs, and shall meet all local and state code requirements. If connections can be made to a municipal system, the design is relatively simple, and should include proper sizing and pitch of sewage mains. If no municipal system is available, an independent system must be designed, including septic tanks, filter beds, or disposal fields. Tanks, beds and drainfields should be located so they will not interfere with possible additions to the building.

8-6.2 Design of sewage disposal systems requires the technical services of a sanitary engineer and the type of installation depends upon local or state codes, character of soil as determined by percolation tests, the location of well, and sources of water supply. The design for school septic tanks shall be based upon a minimum of 15 gallons of flow per pupil per day without showers, and 20 gallons with showers.

8-6.3 Grease traps of adequate size should be provided at convenient locations in kitchen and bus garage sewer mains. (If septic tanks are used, the acid-proof drain from the science laboratories should run into a separate "drywell".)

8-7.0 MISCELLANEOUS

8-7.1 Sinks in kitchens and cooking laboratories should be set at the proper height for those using them and should be equipped with drainboards. Chemistry laboratory sinks and the drains therefrom should be of acid resisting materials. Shops and art rooms should have sinks that can be used both for clean-up service and, when needed, for soaking materials. Hot water with a temperature of 180° F. will be needed for dish sterilization. Since this is a higher temperature than desired for pupil lavatories and showers, a special or a booster heater may be needed for school cafeteria and lunchroom kitchens and laundries.

8-7.2 Should questions arise regarding the adequacy, specifications or sanitary condition of any water or plumbing fixture, it is recommended that the Engineering and Sanitation Division of the State Department of Health be consulted regarding the same.

8-8.0 HOT WATER SUPPLY

8-8.1 Provision shall be made for an adequate continuous supply of hot water at all times. Supplemental electrically-heated or gas-heated tanks, for use during times that furnaces are not in operation, are aids in insuring adequate hot water. Hot water supplied to shower heads and lavatories should not exceed 120° temperature. Hot water installations shall be provided in science laboratories, shower rooms, homemaking units, school lunch kitchens, health suites, lavatories and custodial closets which are provided with sinks. Lavatory faucets should be of the type that deliver both hot and cold water from a central outlet. It is recommended that shower heads in girls' shower rooms be from 54" to 56" in height and that those in boys' shower rooms be 6 ft. 6 in. above the floor.

8-9.0 GAS PIPING

8-9.1 All gas installations shall meet standards established by the National Board of Fire Underwriters. Instances where gas is used for fuel, the main supply lines shall not be placed under the building. It is recommended that master shut-off valves be provided outside the building for safety purposes. A master control valve shall be provided in areas, such as laboratories, kitchens and shops which are equipped with several gas outlets.

8-10.0 STATEMENT OF ADEQUACY

The plans for plumbing, heating and ventilating systems for any public school building in the State of Idaho shall be prepared by a practicing architect or engineer licensed to practice in the State of Idaho. At the time final drawings are submitted to the State Board of Education or its agents for approval, they shall be accompanied by a "Statement of Adequacy" signed by the architect and/or engineer.

The form of the statement shall be as follows:

The plumbing, heating and ventilating systems for (Name of School) of school district number ______ of ______________________ County has been designed by the undersigned. We (or I) are (or am) familiar with the applicable codes, specifications and requirements for plumbing, heating and ventilating systems and their installation in public buildings in the State of Idaho. We (or I) assume responsibility for the proper design of the plumbing, heating and ventilating systems for the (Name of School) of school district number ______ of ________________ County and further declare that the design of the plumbing, heating and ventilating systems meets the requirements of all codes, specifications and regulations applicable to plumbing, heating and ventilating of public buildings in the State of Idaho.

____
Date

____
Signature of Architect

____
Signature of Engineer

INSTRUCTIONS FOR BOND ELECTIONS

1. This abstract may be used for Secondary and Elementary school districts. A school district operating an elementary school or schools, and a secondary school or schools, or issuing bonds for the acquisition of a secondary school or schools, may issue bonds in an amount not to exceed 15% of the assessed valuation thereof, less the aggregate outstanding indebtedness; and no other school district shall issue bonds in an amount to exceed at any time 10% of the assessed valuation thereof less the aggregate outstanding indebtedness.

"Assessed valuation" means the amount of the last preceding equalized assessment of all taxable property within the school district on the tax rolls completed and available as of the date of approval of the school bond election.

"Aggregate outstanding indebtedness" means the total sum of unredeemed outstanding bonds, minus all moneys in the bond interest and redemption fund or funds accumulated for the redemption of such outstanding bonds, with the exception of that portion of such tax levies required for the payment of interest on bonds, which taxes remain uncollected.

2. Qualifications for voters at a bond election are as follows:

   1. A qualified elector of the district; and,

   2. A bona fide resident thereof; and,

      a. A taxpayer; or

      b. The spouse of a taxpayer.

A taxpayer, within the meaning of this section, is a person who pays taxes on real property or who is obligated as owner or contract purchaser to pay taxes on real property situate in the district.

3. Notice of election must state date of election, the hours between which the polls will be open, the definite place or places of holding the election and a brief but clear statement of the purpose or purposes and period for which the bonds are to be issued, the amount of such bond issue and the form and plan thereof.

4. The purposes for which bonds may be issued are: To acquire, purchase or improve a school site or sites; to build one or more schoolhouses or other needed buildings in said district; to add to, remodel or repair, furnish or equip any existing building, including lighting, heating, ventilation and sanitation facilities and appliances necessary to maintain and operate the school or schools; to demolish or remove school buildings; or to purchase school buses.

5. Notice of election must be posted not less than 21 days prior to date of election in at least three places in the district, one of which places shall be at or near the main door of the administrative offices of such district, and by publishing at least once each week for three consecutive weeks prior to the day of the election in a newspaper printed in or of general circulation in the county in which said district lies. In the case of a joint school district consisting of more than one county in the district, there must be a polling place in each county. In addition, notice should be posted in each county.

6. All notices of election must be signed by the clerk of the board of trustees.

7. All elections shall be presided over by two judges and one clerk, who must each be a qualified voter of the district and must take an oath as required in this abstract, which oath shall be administered by a qualified voter of the district.

8. All elections must be by secret and separate ballots.

9. At all elections the ballot shall be kept in a sealed container until the polls are closed.

10. Two-thirds of the qualified electors voting are necessary to authorize the issue.

11. A qualified school elector who expects to be absent from the district on the day of the election, or who will be unable because of physical disability or blindness, to go to the polling place, may make written application to the clerk for a ballot, in accordance with the regulations for absentee voting.

12. Immediately following the closing of the polls, as specified in the notice, the board of election shall compute the result of the election, making the count in public view and shall make return of the election within three days after the closing of the polls and transmit the same and the ballots, under seal, to the board of trustees of such district.

13. The board of trustees shall then at its next meeting canvass such return, formally note the result of such canvass and file the return of election as canvassed with the records of such district.

14. When more than 50% of the taxable property in the district is owned by non-resident persons or corporations, the issue of bonds must be approved by the Board of County Commissioners.

15. The bonds must be signed by the chairman of the board and countersigned by the clerk or secretary, and if the district has a seal such must be affixed. The bonds must also be recorded by the treasurer of the district who shall keep record of the number, amount and status of the issue, together with the name of the successful bidder thereof.

16. The Department of Public Investments of the State of Idaho shall have preferential right to purchase said bond issue, unless the district can obtain a more advantageous sale and purchase, and the clerk of the board of trustees must notify the Department immediately following the approval by the electors, giving full data with reference to the issue.

17. A sufficient tax levy must be made to liquidate the accruing bond obligations and placed to the credit of the bond sinking fund, to be used solely for the payment of interest and principal of the bonds.

18. A form of ballot must be furnished with the abstract.

19. All bond issues pertaining to school district buildings in the State of Idaho shall be approved through the offices of the State Board of Education.

20. Bonds may not be issued at any time after two years have elapsed from the date of the election authorizing their issue.

MINUTES

OF A ______________ MEETING of the Board of Trustees of School District No. ____ in __________________ County, Idaho, on the _____ day of ____________, 19__.

School District No. _____.

STATE OF IDAHO)
) ss.
County of ______________)

At a ______________ meeting of the Board of Trustees of School District No. _____ in _______________ County, Idaho, lawfully called and duly held pursuant to due notice at ________________________________, in said district in _____ __________ County, Idaho, on the _____ day of _____________, 196__, at the hour of ___________ o'clock ___M., at which were present:

Chairman ________________________________

Trustees ________________________________

____

____

____

Clerk ________________________________

constituting the Board of Trustees of said district, the following, among other things were had and done, to-wit:

Trustee _________________________ introduced and moved the adoption of the following resolution and order, which was thereupon duly seconded by Trustee ____ ______________________, put to vote and unanimously carried, and so declared adopted by the chairman, which resolution is as follows:

RESOLUTION

"WHEREAS, the Board of Trustees of School District No. _____ in ____________ County, Idaho, has decided and does hereby decide that it is necessary to _______

____

____

within and for said district; and

WHEREAS, there is no money in the treasury of said school district available for the said purpose; and,

WHEREAS, by Section 33-1103 of the Idaho Code, it is provided that the Board of Trustees of any ____________________ school district may, upon the approval of the majority of the board, submit to the qualified electors of the said district, at an election to be held for that purpose and to be conducted as other school elections, the question whether the board shall be empowered to issue the negotiable coupon bonds in the amount to be mentioned in the notice of election, not to exceed _________ per cent of the assessed valuation of the taxable property in said district, and bearing a rate of interest not exceeding _______ per centum per annum, due within twenty years from the time they are issued; and,

WHEREAS, it is provided by Section 33-1103 Idaho Code, that in order to submit such bonding question to a vote of the qualified electors, as aforesaid, the trustees shall call and hold an election in the same manner as is now prescribed by law for conducting other school elections in said district for the authorization of the issuance of bonds;

NOW, THEREFORE, it is hereby resolved, decided and ordered by the Board of Trustees of ___________________________ School District No. _____, in ________ ____________________ County, Idaho, as follows:

1. That a ______________________ school bond election in and for ________ ____________________ School District No. ________, in ________________County, Idaho, be and the same is hereby called to be held at ________________________, in said district, on the _____ day of ____________________, 19_____, between the hours of _____ o'clock, __.M., and _____ o'clock, ___.M., at which there shall be submitted to the qualified electors of said district, the following question for their vote and determination at said election, to-wit:

> QUESTION SUBMITTED:
>
> "Shall the Board of Trustees of __________________
>
> School District No. _____, in ___________________
>
> County, Idaho, be empowered to issue negotiable coupon bonds of the district in the amount of not

exceeding ______________________________
Dollars, bearing interest at a rate not exceeding
_____ per cent per annum; said bonds to bear date corresponding to the date of their issuance, and the issue of which shall mature and be payable on the amortization plan from not more than two years to twenty years from their date, said bonds to be issued for the purpose of ____________________

____

____

____
within and for said district."

2. That each qualified voter of the district shall vote upon said proposition by secret and separate ballot, each ballot to be in print, type, or in other legible writing and shall be substantially in the following form:

"Shall the Board of Trustees of _______________

School District No. _____, in _______________

County, Idaho, be empowered to issue negotiable coupon bonds of the district in the amount of not exceeding ______________________________
Dollars, bearing interest at a rate not exceeding
_____ per cent per annum; said bonds to bear date corresponding to the date of their issuance, and the issue of which shall mature and be payable on the amortization plan from not more than two years to twenty years from their date, said bonds to be issued for the purpose of

____

____

____

____

within and for said district?"

BONDS Yes ☐

BONDS No ☐

The voter may express his vote by marking a cross (X) opposite the group of words on his ballot which expresses his choice.

3. That the polls for the reception of ballots cast upon said question on said date and at the place aforesaid, shall be opened at the hour of ____ o'clock, __.M., and close at ____ o'clock, __.M., of the same day.

4. That said election shall be conducted as other school elections in said district, except as otherwise provided by law; and two judges, namely

________________________________ and ________________________________

and one clerk, namely ______________________________, all being qualified electors of said district, shall constitute the board of election, and any qualified elector may administer the following oath to said judges and clerk, to-wit:

> "I, ___________________________, being first duly sworn, do upon oath declare that I will support the Constitution of the United States and the Constitution and Laws of the State of Idaho, and faithfully, and to the best of my ability, perform the duties of (judge or clerk) of the school bond election of _______________ School District No. _____, in _______________ County, Idaho, held this _____ day of __________, 19___, so help me God."

That immediately after the close of the polls, as aforesaid, said judges and clerk shall open the ballot box and shall count , in the public view, and compute the result of said election and shall make immediate return of such election and submit such return and the ballots under seal to the Board of Trustees of said district. That upon the canvass of such return and the official finding by the Board of Trustees that the result of such canvass is that two-thirds of the votes cast for said proposition voted upon at said election are in the affirmative, this Board shall issue said bonds in such form and plan as this Board may, by resolution, herein after prescribe.

5. That the clerk of said Board of Trustees shall cause notices to be posted and published stating the date of the election, the definite place of holding said election, the hours between which the polls will be open, and said notice must contain a brief but clear statement of the purpose of said election, the amount of the issue, purpose and period of issue and the form and plan thereof. Said notice shall be posted in three places in the district, one of which shall be at the main door of the administrative office of the district, at least twenty-one days prior to the date of said election, and said notice shall be published at least once a week for three consecutive weeks in a _________________________ newspaper having general circulation within the district. Said notice shall be in substantially the following form:

PUBLIC NOTICE OF SCHOOL BOND ELECTION

In _________________________ School District No. _____, in ___________ County, Idaho.

PUBLIC NOTICE IS HEREBY GIVEN, according to law and the requisite action of the Board of Trustees of ____________

School District No. ____, in __________________ County, Idaho, that a ______________________ school bond election

of said district will be held at ______________________,

in said district on ____________, the ____ day of ________,

19___, between the hours of _______ o'clock, __.M., and ________,

__.M., at which election there will be submitted to the qualified electors of said district, the following question for their vote and determination thereat:

> "Shall the Board of Trustees of ____________
>
> School District No. ___, in ______________
>
> County, Idaho, be empowered to issue negotiable coupon bonds of the district in the amount of not exceeding ______________________ Dollars, bearing interest at a rate not exceeding ___ per cent per annum; said bonds to bear date corresponding to the date of their issuance, and the issue shall mature and be payable on the amortization plan from _____ to twenty years from their date, said bonds to be issued for the purpose of ______________________________
>
> ______________________________
>
> ______________________________
>
> within and for said district?"

Each qualified voter of said district shall vote upon said question by secret and separate ballot whereon shall be in print, type or other legible writing, the question above submitted, and said ballot shall contain the words, "Bonds, Yes," and the words "Bonds, No," and shall indicate his approval or disapproval of the question submitted by the marking of a cross (X) opposite the group of words on his ballot which express his choice.

The polls for the reception of the ballots cast upon said question will, on said day and date and at the place aforesaid be opened at the hour of ________ o'clock, __.M., and will remain open until the hour of ________ o'clock, __.M., of the same day, when they shall be closed.

Dated the _____ day of ______________, 19____.

____
Clerk, Board of Trustees."

6. That all acts, orders or resolutions, or parts thereof, in conflict with this resolution and order, be and the same are hereby rescinded and annulled.

There being no further business, upon motion duly seconded and unanimously carried, the board took a recess to meet again on ____________, the _____ day of ________________, 19___, at the hour of _______ o'clock, ___.M., at ______________ the polling place in said district, for the purpose of receiving the result of the election hereby called, and, if two-thirds of the votes cast at said election are in the affirmative for the proposition voted on, for the purpose of adopting the requisite resolution prescribing bond forms and plans and authorizing their issue.

____
Chairman, Board of Trustees of
______________________ School District
No. _____, in ______________________
County, Idaho.

(SEAL)

Attest:

__________________________ Clerk.

- - - - - - - - - - -

AFFIDAVIT OF POSTING AND PUBLISHING ELECTION NOTICE

STATE OF IDAHO)
) ss.
County of ______________)

______________________ School District No. _____.

I, ____________________, being first duly sworn, upon oath depose and say: That I am now and during all the times hereinafter referred to, have been the duly elected, qualified, sworn and acting clerk of the Board of Trustees of ______________ School District No. _____, ______________________ County, Idaho; that pursuant to an order of said Board made at a lawful meeting hereof held on ______________, the _____ day of ________________, 19___, I caused notices of the date of said election, the hours between which the polls will be open, the definite place of holding said election, a brief statement of the purpose of said election, the amount of the issue, purpose and period of the issue, and the form and plan thereof to be posted in three public places in said district for at least twenty-one days prior to the date of said election, as follows:

1. At or near the main door of the administrative office of said district;

2. ______________________________________,

3. ______________________________________:

that said notices were posted on the _____ day of __________________, 19___, and published for at least once a week for three consecutive weeks in the ____________ ________________________, a newspaper having general circulation within said district.

And affiant further says that each and every of said places of posting was a permanent, public and conspicuous place, and that said notices so posted could have been read easily by persons passing and repassing; that said notices, posted as aforesaid, were left so posted there to remain until the election therein referred to was held, and affiant verily believes that said notices remained so posted until after said election; and that attached to and made a part of this affidavit is a copy of said notice posted as aforesaid, and the publisher's affidavit of publication of such notice.

____

Clerk, ______________________ School

District No. _____, _______________

County, Idaho.

Subscribed and sworn to before me this _____ day of _________________ 19___,

____

(SEAL)

Notary Public for Idaho Residing at

________________________, Idaho.

My Commission Expires _____________.

(Attach hereto Notice of Election as posted.)

PUBLIC NOTICE OF SCHOOL BOND ELECTION

In ____________________________ School District No. _____, in ________________ County, Idaho.

PUBLIC NOTICE IS HEREBY GIVEN, according to law and the requisite action of the board of trustees of ______________________ School District No. _____, in ____________________ County, Idaho, that a special school bond election of said district will be held at the ______________________________, in said district on the _____ day of ____________________, 19 ___, between the hours of _____ o'clock ___.M., and _____ o'clock ___.M., at which election there will be submitted to the qualified electors of the said district, the following question for their vote and determination thereat:

> "Shall the Board of Trustees of ____________________ School District No. ___, in ________________ County, Idaho, be empowered to issue negotiable coupon bonds of the district in the amount of not exceeding ______________________________ Dollars, bearing interest at a rate not exceeding ________ per cent per annum; said bonds to bear date corresponding to their date of issue, and the issue of which shall mature and be payable on the amortization plan from not more than two years to twenty years from their date, said bonds to be issued for the purpose of ____________________________________
> ____
> ____
> ____
> ____
> within and for said district?"

Each qualified voter of said district shall vote upon said question by secret and separate ballot whereon shall be in print, type or other legible writing, the question above submitted, and said ballot shall contain the words, "Bonds, Yes," and the words "Bonds, No," and shall indicate his approval or disapproval of the question submitted by marking of a cross (X) opposite the group of words on his ballot which express his choice.

The polls for the reception of the ballots cast upon said question will, on said date and at the place aforesaid, be opened at the hour of ___ o'clock, ___.M., and will remain open until the hour of _____ o'clock, ___.M., of the same day, when they shall be closed.

Dated this _____ day of ____________________, 19___.

____
Clerk, Board of Trustees

- - - - - - - - - - - -

AFFIDAVIT OF PUBLICATION

STATE OF IDAHO)
) ss.
County of _______________)

__________________________________, being first duly sworn, deposes and says that he is the publisher of the ____, a newspaper published at __________________________ within the said district and in the county of _______________________, State of Idaho, that said newspaper is in general circulation in said county and state, and is published within ___________________ School District No. _____ of ____________________ County, Idaho, and has been continuously and uninterruptedly published and circulated in said district and county during the period of 78 consecutive weeks prior to the first publication of the annexed notice; that the annexed notice was published in the regular edition of the said ______________________________, and not in a supplement, for at least three consecutive weeks, beginning with the issue published on the _____ day of ____________________, 19___.

____

Subscribed and sworn to before me this _____ day of _______________, 19___.

____
Notary Public for Idaho Residing

(SEAL)

at ______________________________, Idaho

My Commission Expires ___________________

(Here attach Notice of Election as published.)

- - - - - - - - - - - -

AFFIDAVIT AND RETURN OF JUDGES AND CLERK OF ELECTION

STATE OF IDAHO)
) ss.
County of __________________)

_________________________ School District No. _____.

____, the judges of election, and _______ _________________________, clerk of the election, respectively, constituting the board of election appointed by the Board of Trustees of ________________ School District No. _____ in ___________________ County, Idaho, and also duly elected at a meeting of and by the qualified voters of said district, legally called and held pursuant to due notice at the _____________________ in ___________________ County, Idaho, in said district, on _______________, the _____ day of _______________, 19__, at _____ o'clock, __.M., of said day and date, to conduct the special bond election to be then and thereafter held in accordance with the legal notice thereof, being first duly sworn separately, and not one for the other, upon oath depose and say:

1. That upon being appointed and elected to said office, I took and subscribed an oath administered by _____________________, one of the qualified school district electors of said district,

as follows, to-wit:

" I, ______________________________,

I, ______________________________,

I, ______________________________,

being first duly sworn, do upon oath declare that I will support the Constitution of the United States and the constitution and laws of the State of Idaho, and faithfully and to the best of my ability perform the duties of judge (or clerk) of the school bond election of ________________ School District No. _____ in __________________ County, Idaho, held this _____ day of __________________, 19___, so help me God."

2. That immediately thereafter, and at the hour of _____ o'clock, ___.M. of said day and date, I, the then duly appointed, elected, qualified, sworn and acting judge (or clerk) of said election, with the other members of the board of trustees of said school district, duly opened the polls and kept the same continuously and uninterruptedly open until the hour of _____ o'clock, ___.M., of the same day for the qualified electors of ________________ School District No. _____, in __________ ______________ County, Idaho to vote upon the question in the words and figures in the said notice of election and hereinafter set forth, that being the purpose for which said election was called; at _____ o'clock, ___.M., of said day, said polls were closed.

3. That the question submitted at said election was the following:

"Shall the Board of Trustees of ________________ School District No. _____, in __________________ County, Idaho, be empowered to issue negotiable coupon bonds of the district in the amount of not exceeding ____Dollars, bearing interest at a rate of not exceeding _____ per cent per annum; said bonds to bear date corresponding to the date of their issuance, and the issue of which shall mature and be payable on the amortization plan from not more than two years to twenty years from their date, said bonds to be issued for the purpose of ______________________

____

____

within and for said district?"

4. That only the qualified voters of the district and no others voted the question submitted; that at said election ____________ secret and separate ballots were cast, of which __________ ballots were in the affirmative, and _________ ballots were in the negative for the proposition voted on; that more than two-thirds of the said ballots so cast were in the affirmative for the proposition voted on, and contained the words, "Bonds, Yes," the result being as follows:

"Bonds, Yes" _____________

"Bonds, No" _____________

Total number of ballots cast upon the question: ________________.

5. The foregoing is a true, perfect and complete result of said election, and we, as judges and clerk of said election, make this return thereof, together with such ballots and the list of voters, to the board of trustees of __________ School District and on this _____ day of ______________, 19____, transmit, under seal, said returns and ballots to said board of trustees.

6. That all of said ballots cast upon said question at said election were cast by qualified voters of said school district and by no others, and that no voters, qualified as aforesaid, were refused the right to vote at said election; that said board of election kept a list of the qualified voters voting as aforesaid, delivering such list to the board of trustees of said school district.

7. That there is also attached hereto a facsimile of the ballot used at said election.

____
Judge of Election

____
Judge of Election

____
Clerk of Election

Subscribed and sworn to before me this _____ day of _______________, 19___.

____
Notary Public for Idaho, residing

(SEAL)

at ________________________________,

Idaho.

My Commission Expires_______________.

- - - - - - - - - - - -

MINUTES

ON AN ADJOURNED MEETING of the Board of Trustees of _______________ School District No. _____, in __________________ County, Idaho, on ___________, the _____ day of ________________, 19___.

STATE OF IDAHO)
) ss.
County of ___________________)

At an adjourned meeting of the Board of Trustees of ______________ School District No. _____, in __________________ County, Idaho, lawfully called and duly held pursuant to due notice at ________________ in said district in ________ County, Idaho, on ________________, the ______ day of ________________, 19___, at the hour of _____ o'clock, ___.M., at which were present:

Chairman___________________________________

Trustees ______________________

____

____

____

Clerk ______________________

constituting the Board of Trustees of said district, the following, among other things were had and done, to-wit:

The returns from the special election held on the _____ day of __________, 19___, for the purpose of authorizing the issuance of bonds in the sum of ______________________________ Dollars, the proceeds thereof to be used for the purpose of ____

____

____

within and for said school district, having been received, and the Board of Trustees of said district having made an official canvass thereof, and it appearing from the said notice and the returns of said election that more than two-thirds of the total vote cast at such special election were in the affirmative on the said proposition voted on, the result of said election being as follows, to-wit: that ________ votes were cast in the affirmative for the proposition voted upon, that ________ votes were cast in the negative against the proposition voted upon, that the total number of votes cast upon the proposition was ________.

It is therefore ordered by the Board that the proposal to issue bonds in the sum of $______________, the proceeds from the sale thereof to be used for the purpose of ____

____

____

within and for said district as voted at said special election, be, and the same is hereby declared carried, and the Board of Trustees thereby empowered to issue such bonds.

There being no further business, the meeting thereupon adjourned.

____
Chairman, Board of Trustees of
____________ School District
No. ___ of ________________
County, Idaho

(SEAL)

Attest:

__________________________ Clerk.

MINUTES

OF A ________________ MEETING of the Board of Trustees of __________ School District No. _____, in ________________ County, Idaho, on __________, the _____ day of _______________, 19___.

STATE OF IDAHO)
) ss.
County of ____________)

________________ School District No. ___.

At a ______________ meeting of the Board of Trustees of __________ School District No. _____, in ____________ County, Idaho, lawfully called and duly held pursuant to due notice at ________________ in said district in ______________ County, Idaho, on ____________, the _____ day of ______, 19___, at the hour of _____ o'clock, ___.M., at which were present:

Chairman ______________________
Trustee ______________________
____
____
____
Clerk ______________________

constituting the board of trustees of said district, the following, among other things, were had and done, to-wit:

Trustee ____________________ introduced and moved the adoption of the following resolution and order, which was thereupon duly seconded by Trustee ______ ____________, put to a vote and unanimously carried, and so declared adopted by the chairman, which resolution is as follows:

RESOLUTION

WHEREAS, the Board of Trustees of ______________ School District No. ______, in ________________ County, Idaho, submitted to a vote of the people the question of issuing ______________________________ of bonds at an election duly called and held on the _____ day of ________________, 19___; and

WHEREAS, said bonds have been duly offered for sale to the Department of Public Investments of the State of Idaho; and

WHEREAS, the said Department has offered to purchase ________________ bonds
(rate of interest)
at the par value thereof; and

WHEREAS, it appears to this Board that it will be impossible to obtain a lower rate of interest elsewhere, or to obtain a better price, that in fact said offer by the Department of Public Investments is the best offer obtainable,

NOW, THEREFORE, It is hereby resolved, decided and ordered that the said bonds be, and they are hereby sold and awarded to the Department of Public Investments of the State of Idaho, said bonds to yield interest at the rate of ___ per cent per annum, payable semi-annually and to be delivered to the said Department of Public Investments upon receipt of the par value thereof in lawful money of the United States of America.

There being no further business, the meeting thereupon adjourned.

____
Chairman, Board of Trustees of
School District No. ____ of
________________County, Idaho.

(SEAL)
Attest:

______________________________ Clerk

MINUTES

OF A ____________________ MEETING of the Board of Trustees of ____________ School District No. _____, in _______________ County, Idaho, on ____________, the _____ day of _______________, 19___.

STATE OF IDAHO)
) ss
County of _______________)

At a _______________ meeting of the Board of Trustees of ____________ School District No. _____, in _______________ County, Idaho, lawfully called and duly held pursuant to due notice at _______________, in said district in ____________ County, Idaho, on _____________, the _____ day of _______________, 19___, at the hour of _____ o'clock, ___.M., at which were present:

Chairman ____________________________

Trustees ____________________________

____

____

____

Clerk ____________________________

constituting the Board of Trustees of said district, the following, among other things, were had and done, to-wit:

Trustee ____________________ introduced and moved the adoption of the following resolution and order, which was thereupon duly seconded by Trustee _______ _______________, put to a vote and unanimously carried and was declared adopted by the Chairman, which resolution is as follows:

RESOLUTION

WHEREAS, in full conformity with law and the requisite action of the Board of Trustees of _______________ School District No. _____ of __________________ County, Idaho, the question of whether the Board of Trustees shall be authorized to issue the negotiable coupon bonds of the district in the amount of not exceeding ______ ____________________________ Dollars, and bearing interest at the rate of not exceeding ___ per centum per annum, payable twenty years after their date, for the purpose of ____ ____ ____ within and for said district, was submitted to the qualified electors of said school district at a meeting and election duly called and held at the __________ ______________ in said district on the _____ day of ______________, 19___; and

WHEREAS, it appears from the returns of said election that two-thirds of the votes cast at said election were in the affirmative for the proposition voted on;

NOW, THEREFORE, BE IT RESOLVED:

1. That for the purpose of ____ ____ ____ within and for said school district, the district shall issue its negotiable coupon bonds in the amount of ______________________________ Dollars, consisting of ________ bonds in the denomination of ______________________________ Dollars each, numbered consecutively beginning with number one and ending with number ______________, both numbers inclusive. Said bonds shall be known as Series ___ of ________________, and shall bear the date of the _____ day of __________, 19__.

2. Each bond shall be numbered consecutively beginning with number one. Said bonds shall bear the signature of the chairman of the board of trustees, countersigned by the clerk and sealed with the seal of said district, and be registered by the treasurer of the district in a book provided by law for such purposes. Said treasurer of the district shall keep an account of the number, amount and status of said bonds, together with the name of the purchaser or purchasers. Both the principal thereof and the interest thereon shall be payable in lawful money of the United States of America, at the office of the Department of Public Investments at Boise, Idaho, and the said Department of Public Investments upon receipt of such

money shall mark such bond or coupon cancelled and return the same to the treasurer of the school district sending the money therefor.

(Bonds sold to others than Department of Public Investment shall name a place of payment mutually agreeable to purchaser and school district.)

3. Said bonds shall bear interest at the rate of ___ per centum per annum from the date of issuance, payable semi-annually on the first day of ____________ and ____________ of each year following such date. The indebtedness created by their issuance shall be payable upon the amortization plan but the principal maturing at any one time shall consist of the total principal of one or more bonds and no bond shall mature or be payable as to principal in partial payments. The first amortized principal payment shall mature and be payable on the _____ day of ________________, 19___, and the various annual maturities thereafter shall, as nearly as practicable, be in such principal amounts as will, together with the accruing interest on all outstanding bonds of such issue, be met and paid by an equal annual tax levy during the term for which such bonds shall be issued.

4. Each interest payment on each bond shall be evidenced by an interest coupon attached to such bond, stating the name of the district, the number and such other matters as will identify the bond to which it is attached, and also the date and place of payment of such interest. The coupons attached to each bond shall be numbered consecutively, beginning with number one. Said coupons shall be signed by the clerk of the board of trustees, personally or by facsimile, and when issued as aforesaid shall be the lawful provises and obligations of the said district, securing the payment of said interest as it becomes due in the hand of all persons to whom said coupons may lawfully come.

5. Said coupons and bonds, and the certificate of the said district treasurer shall be in substantially the form prescribed and required by the State Board of Education of the State of Idaho.

6. That the interest falling due on the first day of ________________, 19___, shall be paid out of the general fund of said school district and for the purpose of reimbursing said general fund for said interest and for the purpose of providing funds for the payment of the interest on said bonds and retiring said bonds as the same become due, there shall be and there hereby is ascertained and levied a direct annual tax upon all the taxable property of said ________________ School District No. _____, of ________________ County, Idaho, sufficient to produce the sums in each of the years given below, and for the purpose of constituting a sinking fund, to be known as the bond sinking fund of said district, for the payment of the principal of said bonds at their date of maturity, there shall be and there hereby is levied a direct annual tax upon all of the taxable property in said __________

School District No. _____ of ________________ County, Idaho, sufficient to produce the sums in each of the years as given below:

Year of Levy	For Interest	For Principal	Total
19____	$__________	$__________	$__________
19____	$__________	$__________	$__________
19____	$__________	$__________	$__________
19____	$__________	$__________	$__________
19____	$__________	$__________	$__________
19____	$__________	$__________	$__________
19____	$__________	$__________	$__________
19____	$__________	$__________	$__________
19____	$__________	$__________	$__________
19____	$__________	$__________	$__________
19____	$__________	$__________	$__________
19____	$__________	$__________	$__________
19____	$__________	$__________	$__________
19____	$__________	$__________	$__________
19____	$__________	$__________	$__________
19____	$__________	$__________	$__________
19____	$__________	$__________	$__________
19____	$__________	$__________	$__________
19____	$__________	$__________	$__________
19____	$__________	$__________	$__________

and the provisions to meet the requirements thereof shall in due time, manner and season be annually thereafter made by the Board of Trustees of said district, and said taxes, when collected, shall be applied solely for the purchase of payment of said interest and principal of said bonds, respectively, and for no other purpose whatsoever, until the indebtedness so contracted under this resolution, both as to principal and interest, shall have been fully paid, satisfied and discharged.

7. That the faith of this district is hereby solemnly pledged for the payment of the interest and the redemption of the principal of all bonds issued under the provisions of law and this resolution, and the tax levies to that end herein provided shall, from this day and date, be in full force and effect, and forever remain so until the indebtedness shall have been fully paid, satisfied and discharged.

8. The said bonds and each and every one of them, when so executed, registered and sold according to law, shall be delivered to the Department of Public Investments of the State of Idaho, the lawful purchaser thereof, in accordance with the law, and the proceeds derived therefrom shall be used exclusively for the purpose for which said bonds are issued; but the purchaser of said bonds shall be in nowise responsible for the application of the proceeds of said bonds by the district treasurer or by said school district or any of its officers, agents or employees.

All resolutions and orders in conflict with this resolution and order are hereby repealed and annulled.

The meeting thereupon adjourned.

____
Chairman, Board of Trustees of
______________School District No. ____,
_________________ County, Idaho.

(SEAL)

Attest:

________________________________ Clerk,
______________School District No. _____
____________________County, Idaho.

CERTIFICATE OF CLERK

STATE OF IDAHO)
) ss.
County of ________________)

________________________School District No. ____.

I, ___________________________________, the duly elected, qualified, sworn and acting clerk of the Board of Trustees of ____________________ School District No. ____, in _____________________ County, Idaho, do hereby certify that I have examined and compared the ________ foregoing pages, and that they contain true, perfect and complete transcript of the record of the proceedings of the Board of Trustees of said district had and taken in connection with the issuance of bonds in the sum of ____ Dollars, for the purpose of

____

____

____

as recorded in the regular official book of records of said proceedings of said school district remaining in my office; that said proceedings were duly had and taken, and the meetings herein referred to were duly held and the persons therein named were present at said meetings and voted as therein shown; that I have examined the signatures affixed to the said foregoing pages and have identified them as the signatures of the officers of said school district as the same appear of record in the regular official record book of said proceedings of the Board of Trustees of said district.

IN TESTIMONY WHEREOF, Witness my hand and seal of said district, affixed in said district this _____ day of ________________, 19___.

____
Clerk, Board of Trustees of
______________School District
No.____ of ____________________
County, Idaho.

(SEAL)

AFFIDAVIT OF COUNTY ASSESSOR

STATE OF IDAHO)
) ss.
County of ____________________)

__________________________, being first duly sworn, on oath deposes and says:

That he is the duly elected, qualified and acting assessor of the County of ________________, State of Idaho;

1. That the assessed valuation of the property in said ____________ School District No. _____, in the County of ______________, State of Idaho, as appears and is shown by the assessment on the tax roll for the year 19___, being the last preceding equalized assessment of all taxable property within the school district on the tax rolls completed and available as of the date of approval by the electorate in the school bond election, was $_____________, as shown by the records of his office;

2. That ________________ (more or less) than 50 per cent of the taxable property in said district is owned by non-resident persons or corporations.

____
County Assessor

Subscribed and sworn to before me this _____ day of ______________, 19___.

____
Notary Public for Idaho, Residing at

(SEAL)

______________________________________, Idaho.

My Commission Expires __________________.

CERTIFICATE OF CHAIRMAN AND CLERK OF DISTRICT

It is hereby certified by the Trustees of ________________ School District No. _____ of ________________ County, Idaho:

1. That ________________ School District No. _____ of ____________________ County, Idaho, is a body corporate and was duly and regularly organized on the _____ day of ______________, 19___; that said district now exercises the prerogatives of a school district and that the legality of its organization has never been legally denied;

2. That the assessed value of the taxable property in said district, as appears by the assessment on the tax rolls completed and available as of the date of approval by the electorate in the school bond election, being the assessment for the year 19___, was $_____________________;

3. That the total outstanding indebtedness of said school district, including this issue of bonds, is as follows:

Bonds	$______________
Warrants . . .	$______________
Total	$______________

4. That there is no litigation pending and so far as known to the school trustees of said ____________________ School District No. _____ of ______________ County, Idaho, no threatened litigation with reference to this issue of bonds

bearing date the _____ day of __________________, 19___, in the aggregate amount

of ____ Dollars;

5. That ________________ than 50% of the taxable property of said district
(more or less)
is owned by non-resident persons or corporations.

The Board of Trustees of __________________ School District No. _____ of

__________________ County, Idaho, have caused this certificate to be signed by

their Chairman, attested by the Clerk of said district, and have affixed the seal

of said district this _____ day of __________________, 19___.

(DISTRICT SEAL)

____
Chairman

Attest:

______________________________ Clerk.

- - - - - - - - - - - -

CERTIFICATE OF TREASURER OF DISTRICT

STATE OF IDAHO)
) ss.
County of __________________)

______________________________ School District No. _____.

It is hereby certified that as appears from the records in my office,

__________________ School District No. _____ of __________________County, Idaho,

had at the date of election, a total registered, outstanding bonded indebtedness

of ______________________________________ Dollars, including the issue of bonds

herein specified, and a total warrant indebtedness of __________________________

___________ Dollars, the total outstanding indebtedness of said district being

____ Dollars.

It is further hereby certified that the certain issue of negotiable coupon bonds of said district, bearing date the _____ day of ________________, 19___, in the aggregate amount of ____ Dollars, has been duly registered in my office in a book provided for that purpose, which registry shows the number and amount of each bond and the person to whom the same has been issued, as follows:

Bonds numbered one to _______________________, both inclusive,

denomination _________________________ Dollars, issued to

the State of Idaho.

Witness my hand and official seal this _____ day of ______________, 19___.

(SEAL) ______________________________________
District Treasurer

- - - - - - - - - - - -

APPROVAL OF BOND ISSUE BY COUNTY COMMISSIONERS

At a regular meeting of the Board of County Commissioners of _____________ County, Idaho, held on the _____ day of _______________, 19____, at which were present ____

____

____

the following resolution was unanimously adopted:

"WHEREAS, It appears to the board that the amount of money proposed to be raised by ___________________ School District No. _____ of this county by the issuance of bonds in the amount of $___________________, as authorized by the special election held therein for that purpose on the _____ day of ___________________, 19___, is reasonably necessary for the present use of the district;

"NOW, THEREFORE, It is hereby resolved, that said bond issue be, and the same is hereby approved."

____
Chairman

Attest:

______________________________ Clerk.

STATE OF IDAHO)
) ss.
County of ________________)

I hereby certify that the above and foregoing is a full, true and correct copy of the resolution of the Board of County Commissioners of ________________ County, Idaho, adopted at its meeting held on the _____ day of ________________, 19___, approving bond issue of the school district therein named, and that said resolution remains in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal this _____ day of ________________, 19___.

____
Clerk, Board of County Commissioners
of ____________________ County, Idaho.

(SEAL)

CERTIFICATE OF BOARD OF EDUCATION

IT IS HEREBY CERTIFIED, That no appeal from the foregoing resolution of the Board of County Commissioners of ________________ County, Idaho, approving said bond issue, has been filed with the State Board of Education, nor has any protest concerning such bond issue been lodged in this office.

Dated at Boise, Idaho, this _____ day of ________________, 19___.

By____________________________________

(SEAL) Title____________________________________

APPENDIX B

SCHOOL LAWS APPLICABLE TO SCHOOL BUILDING CONSTRUCTION

This is a partial list of sections of Idaho Law which affect school building. It is highly recommended that these sections be read, of course, dependence on the school attorney is necessary.

33-116 I.C. SCHOOL DISTRICT UNDER BOARD SUPERVISION. - The State Board of Education may make rules and regulations governing school district activities. This manual becomes effective when adopted by the State Board of Education.

33-122 I.C. SANITATION-SAFETY-COOPERATION WITH OTHER STATE AGENCIES. - Authorizes State Board of Education to work with other agencies on rules and regulations.

33-401 I.C. through 33-406 I.C. SCHOOL ELECTIONS. - These sections regulate all school elections including bond elections.

33-507 I.C. LIMITATION UPON AUTHORITY OF TRUSTEES. - No trustee nor spouse of trustee may have any interest in any contract.

33-601 I.C. REAL AND PERSONAL PROPERTY - ACQUISITION, USE OR DISPOSAL OF SAME. - Title explains purpose of section. Any activity which involves $1,000 or more requires advertising, etc. Also enables school districts to cooperate with cities or villages for joint purchase, construction etc. of recreational facilities.

33-804 I.C. SCHOOL PLANT FACILITIES RESERVE FUND LEVY. - Authorizes an election for a levy of 10 mills for ten years both as maximums. Either may be smaller. Election requirements are the same as for a bond election.

33-901 I.C. SCHOOL PLANT FACILITIES RESERVE FUND. - Authorizes the establishment of such a fund without an election or special levy. Based on depreciation of facilities.

Remodeling of existing buildings must exceed $5,000 if this fund is to be used.

33-1101 through 33-1120 I.C. SCHOOL BONDS. - Regulate entire bonding procedure. See Appendix A for abstract of bond procedure.

15% and 10% debt limitation valid only through June 30, 1965.

66-2216 I.C. SPECIAL TAXING DISTRICT OR BOND PROPOSAL DEFEATED IN ELECTION BARS SUBSEQUENT ELECTIONS FOR SPECIFIED TIME. - Establishes six months waiting period if Bond Election is defeated except in case of fire or other disaster.

3702102 I.C. DOMESTIC WATER TO BE PROTECTED. - Pure water supply must be available.

39-101 (4) I.C. STATE BOARD OF HEALTH - POWERS AND DUTIES. - Gives authority for regulation pertaining to water supply and sewage disposal.

39-1901 I.C. FIRE ESCAPES TO BE PROVIDED FOR CERTAIN STRUCTURES. - Fire escapes must be provided on all school buildings more than one story high. A fire escape stair must be constructed of and be enclosed by walls of non-combustible materials from its highest to its lowest point. Access to fire escapes must be by means of self-closing Class B fire doors.

39-1902 I.C. HOW ATTACHED. - Metallic fire escapes must connect with each floor above the first.

39-1903 I.C. INSPECTION AND DRILLS. - Trustees must cause an inspection to be made of fire escapes at least twice a year and fire drills to be held at least once a month.

39-1904 I.C. PENALTY FOR VIOLATION. - Fine of $200 to $300 or imprisonment for 3 to 6 months or both.

39-1905 I.C. DOORS ON PUBLIC BUILDINGS - PENALTY. - Doors must open outward, failure to comply is a misdemeanor.

39-2701 I.C. through 39-2735, I.C. PLUMBING AND PLUMBERS. - Minimum requirements set forth.

44-1001 I. C. EMPLOYMENT OF RESIDENTS OF IDAHO - WAGE SCALE. - Contractor must employ 95% bona fide Idaho residents unless fewer than 50 employed, then 10% non-residents may be employed. Must pay standard prevailing wages.

44-1002 I.C. TERMS OF EMPLOYMENT AND WAGE CONTRACT. - All contracts for construction must contain clause for agreement with 44-1001, I.C.

44-1006 I.C. DETERMINING PREVAILING WAGE. - The advertised specifications must contain a provision stating the minimum wage rates for the various classes of laborers and mechanics.

45-502 I.C. CONTRACTS FOR PUBLIC WORKS - BOND FOR PROTECTION OF LABORERS AND MATERIALMEN. - A bond equaling the full amount of the contract must be executed for all contracts exceeding $200.

54-309 I. C. Requires the employment of a licensed architect.

54-1001 through 54-1017 I.C. ELECTRICAL CONTRACTORS AND JOURNEYMEN. - Gives provision for regulations for installation and inspection of all electrical systems.

54-1218 I.C. PUBLIC WORK. - A professional engineer must be employed to prepare plans and specifications for any construction involving professional engineering.

54-1901 I.C. DEFINITIONS. - School district included among those governed by Public Works regulations.

54-1902 I.C. Unlawful to engage in public works contracting without state license.

54-1903 I.C. If contract is less than $1,000., 54-1902 does not apply.

54-1904A I.C. FILING OF NOTICES AND INCOME TAX RETURNS - PAYMENT OF INCOME TAXES BY CONTRACTOR. - School district must report the names and addresses of all contracting parties, including sub-contractors, with other required information on forms obtained from the office of the State Tax Collector.

57-601 I.C. INVESTMENT OF SINKING FUND

57-602 I.C. ENFORCEMENT OF LAWS RELATING TO SINKING FUND LEVIES AND INVESTMENT OF SINKING FUND.

57-603 I.C. Liability of Member or Disbursing Officer for wrongful disbursement from sinking fund.

57-706 I.C. School district bonds must be offered to Department of Public Investment. Non-compliance is a misdemeanor.

APPENDIX C

RECOMMENDED HEADINGS FOR SPECIFICATIONS

It is recommended that the following title headings be used in preparing specifications:

These headings follow the recommended specification outline as developed by a Joint Cooperative Committee composed of the Idaho Chapter of the American Institute of Architects, Idaho Branch, Associated General Contractors of America and the Idaho Branch, Consulting Engineers of Idaho.

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APPENDIX D

CHECK SHEET USED BY STATE DEPARTMENT OF EDUCATION FOR PRELIMINARY PLANS AND SPECIFICATIONS

REQUIRED INFORMATION

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